

**A SYNOPSIS, CATALOGUE, AND BIBLIOGRAPHY OF
THE NEUROPTEROID INSECTS OF TEM-
PERATE NORTH AMERICA.**

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In the following pages the author has attempted to make a preliminary compilation of our knowledge of the Neuropteroid insects of the United States, in the form of a synopsis to the genera, a catalogue of the species, and a bibliography since Hagen's "Synopsis" in 1861. In the catalogue I have given the synonymy that has been noted since Hagen's "Synopsis." The progress of Entomology no longer allows us to call these insects "Neuroptera," so I have used the term "Neuropteroid" to indicate, as near as possible, their general affinities. I have omitted the Mallophaga, partly because I know little of the group personally, partly because Hagen did not treat of them, and partly because they will usually be studied in connection with other parasites, rather than with the insects that occupy the following pages.

I desire to thank Mr. Alex. D. MacGillivray for the help he has given me, especially in the Ephemeriðæ.

When an Arthropod obtained wings a new life was opened to it, and with this new life a myriad of possibilities. So, at the beginning of the winged series of insects, one finds a large number of allied types; more or less related to each other, but differing in many important characters. These primitive insects, the forerunners of the other winged orders, have been called Neuroptera. They are separated by no good characters from Orthoptera, but with the latter order they can be tolerably well separated from the other orders of insects, viz., by their biting mouth-parts, the four many-veined membranous wings, and their soft bodies.

As all definitions in Nature cannot be absolute, this, of course, has plenty of exceptions. In regard to the classification, I have adopted that which will represent, as near as possible, what I understand to be natural groups. Briefly, this classification is as follows:

Super-order **PHYLOPTERA.**Order **PLATYPTERA.**

Sub-order PLECOPTERA.

Family PERLIDÆ.

Sub-order CORRODENTIA.

Super-family PSOCINA.

Family ATROPIDÆ.

Family PSOCIDÆ.

Super-family ~~TERMITINA.~~

Family TERMITIDÆ.

Family EMBIDÆ.

Sub-order MALLOPHAGA.

Order **SUBULICORNIA.**

Sub-order PLECTOPTERA.

Family EPHEMERIDÆ.

Sub-order ODONATA.

Super-family AGRIONINA.

Family CALOPTERIGIDÆ.

Family AGRIONIDÆ.

Super-family LIBELLULINA.

Family GOMPHIDÆ.

F. CORDULEGASTERIDÆ

Family ÆSCHNIDÆ.

Family CORDULIDÆ.

Family LIBELLULIDÆ.

Order **NEUROPTERA.**

Sub-order PLANNIPENNIA.

Super-family SIALINA.

Family SIALIDÆ.

Family RAPIDIDÆ.

Super-family MEGALOPTERA.

Family MANTISPIDÆ.

Family CHRYSOPIDÆ.

Family HEMEROBIDIDÆ.

Family MYRMELEONIDÆ.

Family CONIOPTERIGIDÆ.

Sub-order MECAPTERA.

Family PANORPIDÆ.

Order **TRICHOPTERA.**

Family PHRYGANEIDÆ.

Family LIMNOPHILIDÆ.

F. SERICOSTOMATIDÆ.

Family HYDROPTILIDÆ.

Family LEPTOCERIDÆ.

Fam. HYDROPSYCHIDÆ.

Fam. RHYACOPHILIDÆ.

In the text, for each family, I give a figure of the venation, with explanation to facilitate the use of the keys. Most of the terms will be found in ordinary text-books on Entomology. It must be remembered that a key is not a criterion, but a guide.

Key to Suborders.

- 1.—Wings rudimentary or wanting10.
 Wings two.....5.
 Wings four.....2.
- 2.—Hind wings broader than fore wings, folded in repose, antennæ prominent.....3.
 Hind wings never folded, often no broader than fore wings.....5.
- 3.—Tarsi 5-jointed.....4.
 Tarsi 3-jointed.....PLECOPTERA.
- 4.—Costal area with many transverse veins.....SIALIDÆ.
 Costal area nearly free.....TRICHOPTERA.
- 5.—Antennæ short, inconspicuous.....SUBULICORNIA, 6.
 Antennæ longer, distinct.....7.
- 6.—Hind wings much shorter and narrower than fore wings, tarsi 4- or 5-jointed,
 caudal setæ present..... PLECTOPTERA.
 Hind wings about equal to fore wings, tarsi 3-jointed, no caudal setæ.
 ODONATA.

- 7.—Tarsi 5-jointedNEUROPTERA 8.
 Tarsi 2- 3- or 4-jointedCORRODENTIA 9.
 8.—Mouth rostrated.....MECAPTERA.
 Mouth not rostrated.....PLANIPENNIA.
 9.—Wings with many veins, prothorax distinct.....TERMITINA.
 Wings with few veins, prothorax indistinct.....PSOCINA.
 10.—Mouth rostrated.....MECAPTERA.
 Mouth not rostrated11.
 11.—Tarsi 4-jointed, prothorax distinct.....TERMITINA.
 Tarsi 3-jointed.....12.
 12.—Prothorax inconspicuous, no caudal setæ.....PSOCINA.
 Prothorax distinct, two caudal setæ.....PLECOPTERA.

Order **PLATYPTERA.**

Suborder **PLECOPTERA.**

PERLIDÆ.

The body is long, soft and depressed; the antennæ long and setaceous. The mouth-parts are well developed. The larvæ are aquatic, and usually found under stones in running water. The adults are called "stone-flies."

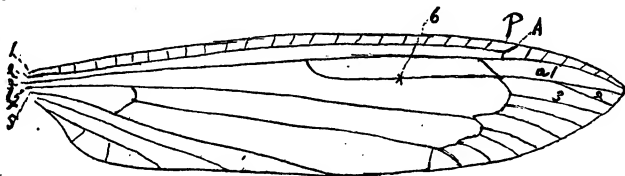


Fig. 1.—A Perlid.

1, costal; 2, subcostal; 3, radius; 4, cubitus; 5, postcubitus; 6, radial sector; P, pterostigma; A, arculus; ar, 2, 3, apical cells.

Key to Genera.

- 1.—Wings with many transverse irregular veins**Pteronarcys.**
 Wings with few more regular transverse veins.....2.
 2.—Submarginal apical space with some transverse veins.3.
 Submarginal apical space without transverse veins.....4.
 3.—Imago with external branchiæ.....**Dictyopteryx.**
 Imago without external branchiæ.**Acroneuria.**
 4.—Caudal setæ present.....5.
 Caudal setæ absent.....10.
 5.—All palpal joints equally thick.....**Capnia.**
 Last palpal joint thinner, filiform.....6.
 6.—Hind wings broader than fore wings, anal space present.7.
 Hind wings not broader than fore wings, anal space absent...**Isopteryx.**
 7.—Between costa and radius, beyond end of subcosta, at least three cross-veins.8.
 Between costa and radius beyond end of subcosta, but one cross-vein.

Chloroperla.

- 8.—Subcostal accessory veinlet of fore wings with four branches...**Isogenus**.
 Subcostal accessory veinlet of fore wings with less than four branches.....9.
 9.—Two ocelli.....**Pseudoperla**.
 Three ocelli.....**Perla**.
 10.—All tarsal joints equally long.....**Teniopteryx**.
 Second joint shorter than others11.
 11.—Anal space of hind wings small, veins of pterostigma simple.....**Leuctra**.
 Anal space of hind wings larger, veins of pterostigma form an X.
Nemoura.

Suborder CORRODENTIA.

Super-family TERMITINA.

This embraces two families, which may be separated as follows:

- Tarsi four jointed.....**TERMITIDÆ**.
 Tarsi three jointed.....**EMBIIDÆ**.

TERMITIDÆ.

These are termed "white ants," since they live somewhat on the plan of the true ants. The workers and soldiers are wingless, the males and females winged. They are mostly tropical, but one species is common all over the United States.

Our genera may be separated as follows:

- 1.—Ocelli absent**Termopsis**.
 Ocelli present.....2.
 2.—Costal area veined, tarsi with apical plantula, prothorax large, oblong.
Calotermes.
 Costal area free, plantula absent, prothorax cordate.....**Termes**.

EMBIIDÆ.

Of this family we have but one genus (*Oligotoma*) and one species, found in Florida.

Super-family PSOCINA.

This embraces two families, easily separated as below:

- Ocelli present, wings well developed.....**PSOCIDÆ**.
 Ocelli absent, wingless or rudimentary wings.....**ATROPIDÆ**.

ATROPIDÆ.

The species of this group are similar to the true Psocidæ. They live usually in concealed places. Our genera may be separated as follows:

- 1.—Meso- and metathorax united, no wings.....**Atropos**.
 Meso- and metathorax separate, rudimentary wings.....2.
 2.—Wings with veins.....**Dorypteryx**.
 Wings veinless, in form of squamæ or tubercles.....3.
 3.—Squamæ small, hyaline.....**Clothilla**.
 Squamæ in the form of scars.....**Lepinotus**.
 Small tubercles in the place of squamæ.....**Hyperetes**.

PSOCIDÆ.

The head is large, the prothorax very small, the body soft; the wings with a few curved veins; the hind wings smaller than the fore wings; the antennæ long.

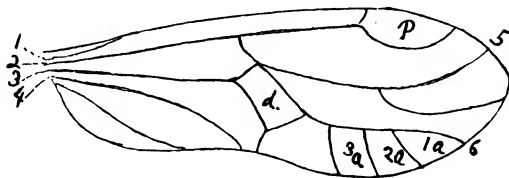


Fig. 2.—A Psocid.

1, costal; 2, subcostal; 3, radius; 4, cubitus; 5, anterior branch of radial sector; 6, posterior branch of radial sector; 1, 2, 3a, posterior cells; P, pterostigma; d, discal cell.

Key to the Genera.

- 1.—Wings with scales and long hairs..... **Amphientomum**.
Wings without hairs and scales, hyaline.....2.
- 2.—Tarsi 3-jointed.....3.
Tarsi 2-jointed.....4.
- 3.—Discoidal cell closed..... **Myopsocus**.
Discoidal cell open..... **Elipsocus**.
- 4.—Discoidal cell closed.....5.
Discoidal cell open.....6.
- 5.—Discoidal cell four-sided..... **Psocus**.
Discoidal cell five-sided..... **Amphigerontia**.
- 6.—Third posterior cell elliptical..... **Cæcilus**.
Third posterior cell elongated .. **Polypsocus**.
Third posterior cell absent..... **Peripsocus**.

Order **SUBULICORNIA**.Suborder **PLECTOPTERA**.**EPEMERIDÆ**.

The "May flies" are easily recognized by their short antennæ, small hind wings and the caudal setæ. The larvæ are aquatic.

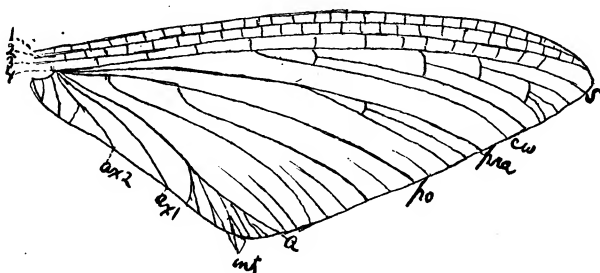


Fig. 3.—An Ephemerid.

1, costal; 2, subcostal; 3, radius; 4, cubitus; 5, sector; cu, cubitus; po, post-branchial pra, prebranchial; a, anal; int, intercalary veins; ax 1, 1st axillary; ax 2, 2d axillary.

Key to the Genera.

- 1.—One pair of wings.....2.
Two pairs of wings.....3.
- 2.—Three setæ.....**Cænis.**
Two setæ.....**Cleon.**
- 3.—Hind tarsi with five joints.....4.
Hind tarsi with four joints (or less).....6.
- 4.—Mesothorax scutellum very large.....**Bætica.**
Mesothorax scutellum normal.....5.
- 5.—Intercalary veins in fore wing.....**Siphilurus.**
No intercalary veins, or very few.....**Heptagenia.**
- 6.—Hind wings rudimentary, few veined, small species.....7.
Hind wings well developed, many veined.....9.
- 7.—Hind wings very narrow, elongate, bi-veined.....**Centropetrum.**
Hind wings broader, obtuse, oblong.....8.
- 8.—Fore wings with cross-veins along whole costal area.....**Callibæticus.**
Fore wings without cross-veins in basal half of costal area.....**Bæticus.**
- 9.—Few cross-veins in basal half of costal area, three setæ, most of cross-veins in apical half of wing, small species.....**Ephemerella.**
Unlike above.....10.
- 10.—Anal vein meets postbranchial at base, three setæ.....11.
Anal vein separated at base from postbranchial.....12.
- 11.—Median seta subequal to others.....**Leptophlebia.**
Median seta far shorter than others.....**Blasturus.**
- 12.—The ♂ with two setæ, ♀ with three, ♀ with hind legs longer than other pairs, white species.....**Polymita.**
Unlike above.....13.
- 13.—For males.....14.
For females.....16.
- 14.—Median seta very rudimentary.....15.
Median seta about as long as others.....**Ephemerella.**
- 15.—Eyes separated by a space only as wide as ocellus, front legs not elongated, pale in color.....**Pentagenia.**
Eyes separated by a space twice as wide as ocellus, fore legs elongated, darker in color.....**Hexagenia.**
- 16.—Median seta rudimentary.....**Hexagenia.**
Median seta subequal to others.....17.
- 17.—Abdominal segments 6-10 over one-half the length of abdomen.....**Ephemerella.**
Abdominal segments 6-10 not over one-half the length of abdomen.....**Pentagenia.**

Suborder ODONATA.

The "Dragon-flies" are among the most common of our Neuropteroid insects. Our forms have been quite thoroughly studied, but the best work has, unfortunately, been published in an almost inaccessible Belgian journal. If good English descriptions were easily

available, I doubt not that the study of these interesting insects would rival that of butterflies. Our forms have been arranged in seven families.

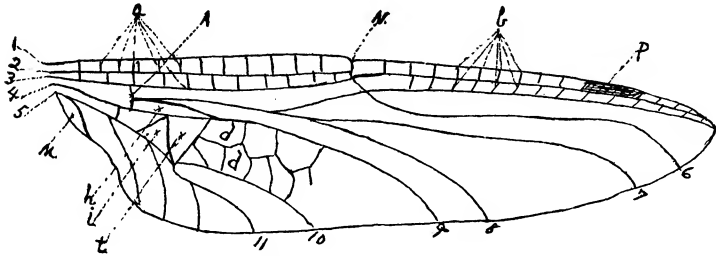


Fig. 4.—Dragon Fly.

1, costal; 2, subcostal; 3, median; 4, submedian; 5, postcostal; 6, nodal sector; 7, subnodal sector; 8, median sector; 9, short sector; 10, upper sector of the triangle; 11, lower sector of the triangle; A, arculus; M, membranule; N, nodus; P, pterostigma; a, antecubitals; b, postcubitals; d, discoidal areolets; h, hypertriangular space; i, internal triangle; t, triangle.

Key to the Families.

- 1.—Wings alike, vertical in repose, eyes peduncled.....2.
Wings dissimilar, horizontal in repose, eyes not peduncled.....3.
- 2.—At least five antecubitals.....**CALOPTERYGIDÆ**.
But two antecubitals.....**AGRIONIDÆ**.
- 3.—Antecubitals of first and second series not corresponding, except at base....4.
Antecubitals of first and second series corresponding.....5.
- 4.—Eyes remote.....**GOMPHIDÆ**.
Eyes touching at a single point.....**CORDULEGASTERIDÆ**.
Eyes touching for some distance.....**ÆSCHNIDÆ**.
- 5.—Eyes tubercled behind.....**CORDULIDÆ**.
Eyes not tubercled behind.....**LIBELLULIDÆ**.

Key to the Genera.

CALOPTERYGIDÆ.

- 1.—Basal space free, wings broad.....**Calopteryx**.
Basal space reticulate, wings narrow.....**Hætarina**.

AGRIONIDÆ.

- 1.—Median and subnodal sectors arise almost under the nodus.....3.
Median and subnodal sectors arise nearer the arculus than nodus.....2.
- 2.—Nodal sector arising $1\frac{1}{2}$ cells after the nodus.....**Archilestes**.
Nodal sector arising 3-5 cells after the nodus.....**Lestes**.
- 3.—Bristles on legs very long, each about twice the distance from the base of one to the next; larger species**Argia**.
Bristles on legs much shorter; smaller species.....**Agrion**.

Subgenera of *AGRION*.

- 1.—No spine at end of eighth segment of ♀2.
A spine at end of eighth segment of ♀6.
- 2.—Lower sector of triangle arising before the basal postcostal nervure.....3.
Lower sector of triangle arising at or after the basal postcostal nervure.....**Erythragrion.**
- 3.—Two postocular spots.....4.
No postocular spots5.
- 4.—Abdomen very slender, color metallic-green.....**Nehalennia.**
Abdomen less slender, color less metallic.....**Agrion.**
- 5.—Color red.....**Pyrrosoma.**
Color bronzed on blue or yellow.....**Erythromma.**
- 6.—Tenth segment of ♂ a little prolonged above7.
Tenth segment of ♂ not prolonged above.....**Enallagma.**
- 7.—Inferior sector of triangle arising before the basal postcostal nervure.....8.
Inferior sector of triangle arising at basal postcostal nervure.....**Oxyagrion.**
- 8.—Two postocular spots9.
No postocular spots**Amphiagrion.**
- 9.—Pterostigma of ♂ removed from costa.....**Anomalagrion.**
Pterostigma of ♂ normal**Ischnura.**

GOMPHIDÆ.

- 1.—Labium entire.....2.
Labium bifid, pterostigma very long.....**Tachyopteryx.**
- 2.—Triangle with transverse veins.....3.
Triangle without transverse veins.....**Gomphus.**
- 3.—Superior side of triangle longer than interior.....4.
Superior side of triangle shorter than interior.....**Gomphoides.**
- 4.—Feet short.....**Progomphus.**
Feet very long**Hagenius.**

Subgenera of *GOMPHUS*.

- 1.—Wings flavescent at base.....**Herpetogomphus.**
Wings not flavescent at base.....2.
- 2.—Thorax almost wholly greenish, dark marks faint, narrow and brownish.
femora mostly yellow**Ophiogomphus**
Thorax with dark marks more distinct, broader, often confluent, legs mostly
black3.
- 3.—Hind femora extremely long and spinous.....**Dromogomphus**
Hind femora not very long or spinous.....4.
- 4.—Dorsum of thorax with a single, median, yellow spot.....**Octogomphus.**
Dorsum with lateral yellow or green stripes**Gomphus.**

CORDULEGASTERIDÆ.

We have but one genus (*Cordulegaster*) in this family.

ÆSCHNIDÆ.

- 1.—Triangle with one transversal.....**Gomphaeschna.**
Triangle with two or more transversals.....2.

- 2.—Subnodal sector furcate in hind wings.....3.
 Subnodal sector not furcate in hind wings.....4.
 3.—Anal angle of ζ rounded, longitudinal vein below subnodal sector does not reach the margin of the wing, but ends in the wing about as far from anterior as from posterior margin.....**Anax.**
 Anal angle of ζ acute, above vein ends in posterior margin or near it.
Æschna.
 4.—Triangle very long, superior side much more than twice as long as inferior, fore wing broadest beyond nodus.....**Neuræschua.**
 Triangle shorter, superior side barely twice as long as inferior, fore wing broadest at nodus **Basiaeschna.**

CORDULIDÆ.

- 1.—Hypertriagonal space free, sectors of arculus free at origin.....2.
 Hypertriagonal space traversed, sectors of arculus more or less united at origin.....**Macromia.**
 2.—No internal triangle to hind wings.....**Cordulia.**
 Internal triangle present.....**Epithea.**

LIBELLULIDÆ.

- 1.—Triangle of wings four sided **Nannothemis.**
 Triangle of wings three sided2.
 2.—Eyes connected in a long space, two rings on abdominal segments 2-4, hind wings very broad at base, sectors of arculus pedicellate.....**Pantala.**
 Eyes connected in a short space, but one ring on basal abdominal segments.3
 3.—Rings on segments 2-4. hind wings extremely broad at base**Tramea.**
 Rings on segments 2-3, none on fourth, hind wings much less broad.....4.
 4.—Hind lobe of prothorax large, bilobed.....5.
 Hind lobe of prothorax small entire9.
 5.—Sectors of arculus pedicellate.....6.
 Sectors of arculus not pedicellate.....8.
 6.—Abdomen very slender, nearly as long as the wings; large species.
Lepthemis.
 Abdomen thicker, shorter than wings; smaller species.....7.
 7.—Abdomen broad, nearly equally wide throughout.....**Mesothemis.**
 Abdomen more slender, smaller species.**Diplax.**
 8.—Upper side of triangle as long as inner side, abdomen broad..**Perithemis.**
 Upper side of triangle much shorter than inner side.....**Celithemis.**
 9.—Sectors of arculus pedicellate.....10.
 Sectors of arculus not pedicellate.....**Libellula.**
 10.—Pterostigma very long, covering four or five cells.....**Orthemis.**
 Pterostigma covering not more than three cells.....11.
 11.—Hind wings distinctly broader at base than at nodus.....**Dythemis.**
 Hind wings not broader at base than at nodus.....**Trithemis.**

Order NEUROPTERA.**Suborder PLANIPENNIA.**

This is divided into two super-families as below :

- Hind wings with an anal space.....**SIALINA.**
 Anal space absent.....**MEGALOPTERA.**

SIALINA.

This embraces two families, separated as follows:

- Prothorax quadrangular.....SIALIDÆ.
Prothorax long and cylindrical.....RAPHIDIDÆ.

Key to the Genera.

SIALIDÆ.

- 1.—No ocelli.....**Sialis**.
Ocelli present.....2.
2.—Mandibles prominent, in ♂ elongate.....**Corydalis**.
Mandibles less prominent, not elongate.....**Chauliodes**.

RAPHIDIDÆ.

- 1.—Ocelli present.....**Inocellia**.
Ocelli absent.....**Raphidia**.

Suborder MEGALOPTERA.

This embraces five families, which may be separated as follows:

- 1.—Anterior legs raptorial.....MANTISPIDÆ.
Anterior legs not raptorial.....2.
2.—Wings covered with whitish powder.....CONIOPTERYGIDÆ.
Wings not powdered.....3.
3.—Antennæ clavate.....MYRMELEONIDÆ.
Antennæ not clavate.....4.
4.—Antennæ moniliform.....HEMEROBIDÆ.
Antennæ setiform.....CHRYSOPIDÆ.

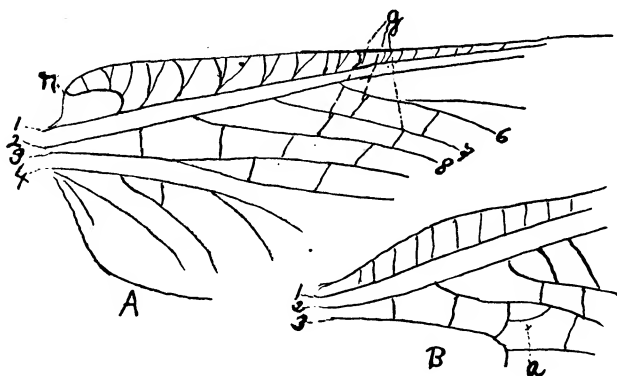


Fig. 5.—Hemerobid.

A, Hemerobius; 1, subcostal; 2, radius; 3, cubitus; 4, postcubitus; 6, 8, sectors; n, recurrent vein; g, gradate veins. B, Chrysopa; a, third cubital cell.

Key to the Genera.

CONIOPTERYGIDÆ.

- 1.—Wings ciliated, eyes reniform **Aleuronina.**
 Wings not ciliated, eyes globose. **Coniopteryx.**

MANTISPIDÆ.

- 1.—Female with a long ovipositor..... **Symphasis.**
 Female without ovipositor..... **Mantispa.**

CHRYSOPIDÆ.

- 1.—A horn between antennæ..... **Meleoma.**
 No horn 2.
 2.—Third cubital cell equally divided..... **Nothochrysa.**
 Third cubital cell unequally divided..... **Chrysopa.**

HEMEROBIDÆ.

- 1.—Ocelli present **Dilar.**
 Ocelli absent..... 2.
 2.—A recurrent vein... 3.
 No recurrent vein..... 4.
 3.—Last joint of maxillary palpi truncate, large species..... **Polystæchotes.**
 Last joint of maxillary palpi subulate, small species..... **Hemerobius.**
 4.—Subcosta joined to the radius at tip 5.
 Subcosta free from radius at tip..... 6.
 5.—Subcostal space free **Sisyr.**
 Subcostal space with one basal veinlet..... **Climacia.**
 6.—But one sector, often but two wings..... **Psectra.**
 Several sectors, four wings..... 7.
 7.—Wings acute at apex, outer margin excised..... **Berotha.**
 Wings entire, rounded..... **Micromus.**

MYRMELEONIDÆ.

This comprises two well-marked sub-families.

- Antennæ long, nearly as long as wings..... **Ascalaphinæ.**
 Antennæ short, not one-third as long as wings..... **Myrmeleoninæ.**

Myrmeleoninæ.

- 1.—Claws dilated at base, very stout **Acanthaclisis.**
 Claws not dilated, slender..... 2.
 2.—Wings with a black band at tip or ocellate spots **Dendroleon.**
 Unlike above..... 3.
 3.—No spurs on tibiæ **Maracanda.**
 Spurs present..... 4.
 4.—A double series of costal areoles. at least before pterostigma. spurs no longer
 than the two basal joints of tarsus..... **Brachynemurus.**
 A single series of costal areoles. **Myrmeleon.**

Ascalaphinæ.

- | | |
|--|----------------------|
| 1.—Eyes sulcated..... | 2. |
| Eyes entire..... | Ptynx. |
| 2.—Hind margin of wings entire..... | Ulula. |
| Hind margin of hind wings excised..... | Colobopterus. |

Suborder MECAPTERA.**PANOPIDÆ.**

The "Scorpion-flies," as they are called, because of the peculiar structure of the male genitalia, are a very well defined group. They are the ancestors of the Diptera. Our forms, though not uncommon, are not numerous. *Panorpa* is restricted to the Eastern States. The larvæ have pro-legs like caterpillars.

Key to the Genera.

- | | |
|---------------------------------------|--------------------|
| 1.—Three ocelli..... | 2. |
| Ocelli absent..... | 4. |
| 2.—Two claws to tarsus..... | 3. |
| One claw to tarsus..... | Bittacus. |
| 3.—Tarsal claws serrated..... | Panorpa. |
| Tarsal claws simple..... | Panorpodes. |
| 4.—Wingless, or wings very short..... | Boreus. |
| Wings well developed..... | Merope. |

Order TRICHOPTERA.

Although quite a number of species have been described from our country, but little good work has been done. The classification is in a very unsatisfactory form. The forms are common, easily collected, and not more difficult of study than moths. They are the stock from which Lepidoptera have sprung. I divide the order into seven families, which may be separated as follows :

- | | |
|--|-------------------------|
| 1.—Spines on the legs, three ocelli..... | 2. |
| No spines, only hairs and spurs..... | 3. |
| 2.—Four spurs on middle tibiæ..... | PHRYGANIDÆ. |
| Two or three spurs on middle tibiæ..... | LIMNEPHILIDÆ. |
| 3.—Last joint of palpi not elongated, simple, not flexible..... | 4. |
| Last joint of palpi elongate, flexible, palpi hairy..... | 6. |
| 4.—Male palpi 4-jointed, ocelli absent..... | 5. |
| Male palpi 5-jointed, ocelli often present, when absent the spurs 2-4-4. | |
| | RHYACOPHILIDÆ. |
| 5. No spurs on anterior legs..... | HYDROPTILIDÆ. |
| Spurs present on anterior legs..... | SERICOSTOMATIDÆ. |

6.—Basal joint of antenna long and large, wings slender, no ocelli.

LEPTOCERIDÆ.

Basal joint of antenna shorter, wings broader, last joint of palpi multi-articulate.....HYDROPSYCHIDÆ.

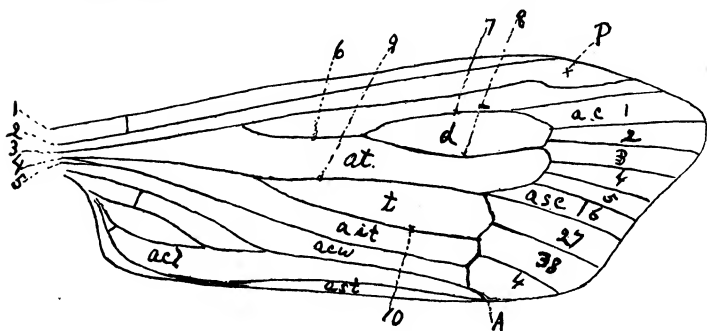


Fig. 6.—A Caddis Fly.

1, costal; 2, subcostal; 3, radius; 4, cubitus; 5, postcubitus; 6, radial sector; 7, radial sector, branch 1; 8, radial sector, branch 2; 9, thyridium; 10, divisialis; d, discoidal cell; t, thyridial cell; at, thyridial area; ait, inclavial area; acu, cubital area; acl, clavial area; asc, supra-apical cells; ast, sutural area; ac, apical cells; asc, supra-apical cells; P, pterostigma; A, arculus.

Key to the Genera.

PHRYGANIDÆ.

Discoidal cell in fore wing much longer than its pedicel.....**Phryganea.**
 Discoidal cell in fore wing about as long as its pedicel.....**Agrypnia.**
 Discoidal cell in fore wing plainly shorter than its pedicel.....**Neuronia.**

LIMNEPHILIDÆ.

Spurs 0-2-2 or 1-2-2.....1.
 Spurs 0-2-4 or 1-2-4.....3.
 Spurs 0-3-3 or 1-3-3.....**Halesus.**
 Spurs 1-2-3.....**Ecclisopteryx,**
 Spurs 1-3-4.....2.
 1.—Wings thickly pubescent.....**Encocyla.**
 Pubescence very short and sparse.....**Cryptothrix.**
 2.—Hind wings pouched at base.....**Platyphylax.**
 Hind wings not pouched at base.....**Apatania.**
 3.—Outer margin of fore wing entire.....**Neophylax.**
 Outer margin of fore wing with a projection.....**Anobolia.**
 4.—Outer margin of fore wing rounded.....**Limnephilus**
 Outer margin of fore wing truncate.....

Subgenera.

ANABOLIA has two sub-genera, *Anobolia* and *Stenophylax*.

LIMNEPHILUS has six sub-genera as follows: *Limnephilus*, *Goniotaulius*, *Colpotaulius*, *Desmotaulius*, *Glyphotaulius*, *Grammotaulius*.

SERICOSTOMATIDÆ.

Spurs 1-4-4.....	Nosopus.
Spurs 2-4-4.....	2.
Spurs 2-2-4.....	1.
Spurs 2-2-2.....	Dasystoma.
Spurs 2-3-3.....	Brachycentrus.
1.—Discoidal cell in hind wing open.....	Sericostoma.
Discoidal cell in hind wing closed.....	Notidobia.
2.—Basal joint of antenna longer than the head.....	3.
Basal joint of antenna about as long as head.....	Helicopsyche.
3.—End of abdomen suddenly dilated.....	Sphinctogaster.
End of abdomen normal.....	4.
4.—Discoidal cell in hind wing open.....	Silo.
Discoidal cell in hind wing closed.....	Mormonia.

HYDROPHILIDÆ.

We have but one genus, *Phryxicoma*.

RHYACOPHILIDÆ.

1.—No ocelli.....	Beræa.
Ocelli present.....	2.
2.—Spurs 3-4-4.....	Rhyacophila.
Spurs 2-4-4.....	Agapetus.
Spurs 1-4-4 or 0-4-4.....	Chimarra.

LEPTOCERIDÆ.

1.—Last joint of maxillary palpi short, wings with a median cell, spurs ♂ 2-4-2, ♀ 2-4-4.....	Heteroplectron.
Last joint long, filiform.....	2.
2.—Four spurs on middle tibia.....	3.
Two spurs on middle tibia.....	4.
3.—Spurs 2-4-3.....	Aniscentropus.
Spurs 2-4-4.....	Molanna.
4.—Spurs 2-2-2.....	Leptocerus.
Spurs 0-2-2 or 1-2-2.....	5.
5.—Wings black.....	Mystacides.
Wings pale.....	Setodes.

HYDROPSYCHIDÆ.

1.—No ocelli.....	2.
Ocelli present.....	Philopotamus.
2.—Spurs 1-4-4.....	Smicridea.
Spurs 2-4-4 or 2-2-4.....	3.
Spurs 3-4-4.....	Polycentropus.
3.—Spurs 2-4-4.....	4.
Spurs 2-2-4, large, well-marked species.....	Macronema.
4.—Second joint of maxillary palpus much longer than third or fourth.....	
	Hydropsyche.
Second joint maxillary palpus not longer than third or fourth.....	5.
5.—Maxillary palpus, joints two, three and four equal.....	Psychomyia.
Third joint longer than second or fourth.....	Tinodes.

Catalogue of the Species.

PERLIDÆ.

PTERONARCYS Newm.

- proteus* Newm., H. 1, p. 14; H. 13, p. 281. N. Y., B. Am., Vt., Cal.
californicus Newp., H. 1, p. 16; H. 13, p. 283. B. Am., Utah, Wash., Cal., Col.
biloba Newm., H. 1, p. 15; H. 13, p. 284. N. Y., Minn., Can.
bicarinatus Prov., P. 1, 69.
nobilis Hag., H. 1, p. 15; H. 13, p. 285. N. Y., Tenn.
pictetii Hag., H. 13, p. 286. Pa., Minn., Can.
regalis Newm., H. 1, p. 15; H. 13, p. 286. B. Am., Mass., Me., N. Y., Minn., Can.
insignis Pict., H. 1, p. 16.
flavicornis Prov., P. 1, p. 70.
rectus Prov., P. 1, p. 68. Can.
regularis Hag., H. 18, p. 573. Nev.
badia Hag., H. 18, p. 573. Wy., Utah, Col.
 (?) *dorsata* Say, H. 1, p. 20. Pa.

ACRONEURIA Pict.

- abnormis* Newm., H. 1, p. 17. U. S., Can.
rupinsulensis Walsh, W. 1, p. 363. Ill.
ruralis Hag., H. 1, p. 18. Mo.
arida Hag., H. 1, p. 18. N. Y., Pa.
hieroglyphica Prov., P. 1, 72. Can.
navalis Prov., P. 1, p. 73. Can.
riparia Prov., P. 1, 74. Can.

DICTYOPTERYX Pict.

- signata* Hag., H. 18, p. 575. Col., Cal., Oreg.

ISOGENUS Newm.

- frontalis* Newm., H. 1, p. 18. Can., N. Y., Ohio.
sulcata Prov., P. 1, p. 74.
elongatus Hag., H. 18, p. 576. Col., Utah.
colubrinus Hag., H., 18, p. 576. Idaho, B. Am.
clio Newm., H. 1, p. 19. Ga.
drymo Newm., H. 1, p. 19. Ga.
quebecensis Prov., P. 1, 72. Can.

PERLA Geoff.

- annulipes* Hag., H. 1, p. 22. D. C.
decipiens Walsh, W. 1, p. 364. Ill.
ebria Hag., H. 18, p. 577. Col.
elongata Walsh, W. 1, p. 366. Ill.
ephyre Newm., H. 1, p. 28. Ga., N. Y., La., Va.
flavescens Walsh, W. 1, p. 363. Ill., Can.
marginipes Prov., P. 1, p. 73.
lurida Hag., H. 1, p. 21. La.

lycorias Newm., H. 1, p. 21. N. Y.
olivacea Walk., H. 1, p. 23. Can.
placida Hag., H. 1, p. 28. N. Y., D. C.
postica Walk., H. 1, p. 23. La., D. C., Can.
similis Hag., H. 1, p. 26. Pa., Md.
sobria Hag., H. 18, p. 577. Col.
tristis Hag., H. 1, p. 22. N. Y., D. C.
varians Walsh, W. 1, p. 364. Ill.
xanthenes Newm., H. 1, p. 26. Pa., Ga.
capitata Pict., H. 1, p. 22. U. S. [no definite locality.]
clymene Newm., H. 1, p. 29. Ga.
couloni Pict., H. 1, p. 20. U. S. [no definite locality.]
immarginata Say, H. 1, p. 20. Ohio.
media Walsh, H. 1, p. 24. Can.
naica Prov., P. 1, p. 75. Can.
picta Pict., H. 1, p. 27. N. Am. [no definite locality.]

PSEUDOPERLA [Note 1.]

occipitalis Pict., H. 1, p. 27. Pa., N. Y., D. C., Md.
producta Walsh, W. 1, p. 365. Ill.
fumipennis Walsh, W. 1, p. 366. Ill.

CHLOROPERLA Pict.

bilineata Say, H. 1, p. 30. Ill., Can., N. Y., Ohio.
brunnipennis Walsh, W. 1, p. 367. Ill.
imbecilla Say, H. 1, p. 31. Ohio, N. Y.
nana Walsh, W. 1, p. 367. Ill., Can.
severa Hag., H. 1, p. 30. Alaska, Can.
citrinella Newp., H. 1, p. 31. Can., Nova Scotia.
decisa Walk., H. 1, p. 30. Can.
decolorata Walk., H. 1, p. 29. B. Am.
guerinii Pict., H. 1, p. 29. La.
maculata Pict., H. 1, p. 29. Pa.

ISOPTERYX Pict.

cydippe Newm., H. 1, p. 31. Ga., N. Y., D. C., Ill.

CAPNIA Pict.

minima Newp., H. 1, p. 33. Can., Ill.
necydaloides Pict., H. 1, p. 32. D. C., N. Y.
pygmæa Burm., H. 1, p. 32. Pa., N. Y., Newfoundland.
vernalis Newp., H. 1, p. 33. Can.

TENIOPTERYX Pict.

fasciata Burm., H. 1, p. 34. Pa., D. C., Ill.
frigida Hag., H. 1, p. 35. Md.
glacialis Newp., H. 1, p. 36. Can.
maura Pict., H. 1, p. 35. Pa., S. C., Can.
chicoutimiensis Prov., P. 1, p. 75.
similis Hag., H. 1, p. 34. D. C.

NEMOURA Pict.

- albidipennis Walk., H. 1, p. 36. D. C., Ill., Nova Scotia.
 completa Walk., H. 1, p. 36. Ill., Nova Scotia.
 incerta Prov., P. 1, p. 217. Can.
 completa Prov., not Walk.
 perfecta Walk., H. 1, p. 37. N. Y., Can., Nova Scotia.
 nigritta Prov., P. 1, p. 79.

LEUCTRA Steph.

- brunnea Prov., P. 1, p. 80. Can.
 ferruginea Walk., H. 1, p. 37. Nova Scotia.
 tenella Prov., P. 1, p. 80. Can.
 tenuis Pict., H. 1, p. 37. Pa., D. C., N. Y.

TERMITIDÆ.**CALOTERMES** Hagen.

- castaneus Burm., H. 1, p. 1. Cal.
 marginipennis Latr., H. 1, p. 2. Cal.

TERMOPSIS Heer.

- angusticollis Walk., H. 1, p. 3. Pacific States, La.
 occidentis Walk., H. 1, p. 3. Cal.

TERMES Linn.

- flavipes Koll., H. 1, p. 3. U. S.
 cinereus Buck., B. 1, p. 213. Texas.
 tubiformans Buck., B. 1, p. 214. Texas.

EMBIIDÆ.**OLIGOTOMA** Hag.

- hubbardii Hag., H. 26, p. 142. Fla.

ATROPIDÆ.**HYPERETES** Hag.

- tessulatus Hag., H. 25, p. 316. Mass., Ky., Me.

LEPINOTUS Hag.

- piceus Mots., H. 1, p. 8; H. 25, p. 314. Cal.
 inquilinus Hey., H. 25, p. 309. Mass.

CLOTHILLA West.

- annulata Hag., H. 25, p. 307. Mass.
 pulsatoria Linn., H. 25, p. 300. Mass., N. Brunswick.

ATROPOS Leach.

- divinatoria Fab., H. 1, p. 8; H. 25, p. 289. Mass., Can., Ky., Mich., N. J.
 purpurea Aaron, A. 1, p. 37. Pa.

DORYPTERYX Aaron.

- pallida Aaron, A. 1, p. 38. Pa.

PSOCIDÆ.**CÆCILIUS** Curtis.

- aurantiacus* Hag., H. 1, p. 14. Ga., Ill.
confluens Walsh, W. 2, p. 185. Ill.
permadidus Walsh, W. 2, p. 185. Ill.
rufus Walsh, W. 2, p. 185. Ill.
definitus Aaron, A. 1, p. 38. Pa.
subflavus Aaron, A. 4, p. 13. Texas.
impactus Aaron, A. 4, p. 14. Pa.
nubilus Aaron, A. 4, p. 13. Texas.
pedicularis Linn., H. 24, p. 220. N. Y., Ill., Mass.
salicis Fitch, H. 1, p. 13.
geologus Walsh, W. 1, p. 362.
 (?) *pusillus* Harris, Harr. 1, p. 331.

ELIPSOCUS Hagen.

- conterminus* Walsh, W. 2, p. 185. Ill.
pumilis Hag., H. 1, p. 9. N. Y.
unipunctatus Muell., H. 24. N. Y., Mass.
signatus Hag., H. 1, p. 9.
gracilis Harris, Harr. 1, p. 332.
maculosus Aaron, A. 1, p. 40. Pa.

MYOPSOCUS Hagen.

- lugens* Hag., H. 1, p. 9. D. C., Mass.
nubilus Harris, Harr. 1, p. 331.

PERIPSOCUS Hagen.

- madescens* Walsh, W. 2, p. 186. Ill.
madidus Hag., H. 1, p. 12. N. Y., Ga.

POLYPSOCUS Hagen.

- corruptus* Hag., H. 1, p. 13. D. C., Ga., Ill.
abruptus Hag., H. 1, p. 13.

AMPHIENTOMUM Pict.

Echmepteryx Aaron.

- hageni* Packard, Pack. 2, p. 405. Me., Mass., Pa.
agilis Aaron, A. 4, p. 17. [Note 2.]

AMPHIGERONTIA Kolbe.

Blaste Kolbe.

- juvenilis* Kolbe, K. 1, p. 65. Pa.
lichenatus Walsh, W. 2, p. 183; H. 24, p. 196. Ill.
mœstus Hag., H. 1, p. 11; H. 24, p. 196. N. Eng., Ga.
variegatus Fab., see European authors. N. Y., Ga.

PSOCUS Latr.

- amabilis* Walsh, W. 1, p. 362. Ill.
atratus Aaron, A. 1, 39. Pa.

- bifasciatus* Walsh, W. 2, p. 183. Ill.
campestris Aaron, A. 4, p. 15. Texas.
contaminatus Hag., H. 1, p. 10. N. Y., Md., D. C., Ill.
inornatus Aaron, A. 1, p. 39. Pa.
leidyi Aaron, A. 4, p. 15. N. Am. [no definite locality.]
lucidus Harris, Harr. 1, p. 328. Mass.
novascotiæ Walk., H. 1, p. 11. Nova Scotia, N. Y., Ill.
perplexus Walsh, W. 1, p. 361. Ill.
pollutus Walsh, W. 1, p. 361. Ill.
purus Walsh, W. 1, p. 361. Ill.
quadrifasciatus Harris, Harr. 1, p. 331. Mass.
quietus Hag., H. 1, p. 12. N. Y., Ga.
semistriatus Walsh, W. 1, p. 361. Ill.
sexpunctatus Linné, A. 1, p. 39. Pa.
sparsus Hag., H. 1, p. 8. D. C., Md., W. Va., Mass.
infuscatus Harris, Harr. 1, p. 332.
speciosus Aaron, A. 1, p. 40. N. C.
striatus Walk., H. 1, p. 11. Nova Scotia, N. Y., D. C., Pa., Mass.
frontalis Harris, Harr. 1, p. 330.
texana Aaron, A. 4, p. 16. Texas.
var. submarginatus Aaron.
trifasciatus Prov., P. 1, p. 65. Can.
nigrofasciatus Hag. mss.
variabilis Aaron, A. 1, p. 38. Pa.
venosus Burm., H., 1, p. 10. Eastern U. S.
gregarius Harris, Harr. 1, p. 329.
canadensis Prov., P. 1, p. 65. Can. [Note 3.]
citricola Ashm., Ash. 1, p. 228. Fla.
flavidus Prov., P. 1, 64. Can.

EPHEMERIDÆ.

POLYMITARCYs Eaton.

- albus* Say, H. 1, p. 40; E. 2, p. 47. Can., N. Y., N. J., La.
puella Pict., H. 1, p. 40.
Ephoron leukon Will., Will. 1, p. 71-73.

HEXAGENIA Walsh.

- bilineata* Say, E. 2, p. 50. Eastern U. S.
limbata Hag. not Pict., H. 1, p. 41.
oculata Walk., H. 1, p. 43.
limbata Pict. U. S.
bilineata Hag. not Say, H. 1, p. 41.
variabilis Eaton, E. 2, p. 55. [Note 4.]
munda Eaton, E. 2, p. 53. N. Car.
venusta Eaton, E. 2, p. 54. Texas, Utah.

PENTAGENIA Walsh.

- vittigera* Walsh, W. 1, p. 373; E. 2, p. 76. Ill., Texas.
quadripunctata Walsh, W. 2, p. 198; E. 2, p. 77. Ill., La.

EPHEMERA Linn.

- compar* Hag., H. 18, p. 578; E. 2, p. 65. Col.
decora Hag., not Walk., H. 1, p. 38; H. 18, p. 578. New England, N. Y.
varia Eaton, E. 2, p. 69.
flaveola Walsh, W. 1, p. 377; E. 2, p. 71. Ill.
guttulata Pict., H. 18, p. 579; E. 2, p. 66. N. Y., Can.
myops Eaton, not Walsh, E. 1, p. 71.
simulans Prov., not Walk., P. 1, p. 81.
simulans Walk., H. 1, p. 38; H. 18, p. 580; E. 2, p. 67. Can., Ill., Me., N. Y.
natata Walk., H. 1, p. 39.
guttulata Eaton, not Pict., E. 1, p. 69 (in part).
decora Walk., not Hag.
myops Walsh, W. 2, p. 207; E. 2, p. 72. Ill.

BLASTURUS Eaton.

- cupidus* Say, H. 1, p. 51; E. 2, p. 101. Can., N. Y., D. C., Ill.
P. concinnus Walk., H. 1, p. 51.
ignava Hag., H. 1, p. 47.
gravastellus Eaton, E. 2, p. 102. Mont.
nebulosus Walk., W. 1, p. 372.
P. odonatus Walsh, W. 1, p. 372.

SIPHILURUS Eaton. [Note 5.]

- alternatus* Say, H. 1, p. 49; E. 2, p. 219. N. Y., Ill., Can.
B. alternans Prov., P. 1, p. 82.
B. femorata Prov., not Say, P. 1, p. 83.
B. annulata Walk., H. 1, p. 48.
aridus Say, H. 1, p. 46; E. 2, p. 206. Ill., D. C., Ind., N. Y.
bicolor Walk., H. 1, p. 43; E. 2, p. 221. Can.
dissitus Eaton, E. 2, p. 210. Cal.
I. manca Eaton, ♂ not ♀, E. 1, p. 134.
exquisitus Eaton, E. 2, p. 212. Wash., Oreg.
femoratus Say, H. 1, p. 48; E. 2, p. 220. Ill., Ohio, N. Y.
B. interlineata Walsh, W. 2, p. 190.
intermedius Eaton, E. 2, p. 207. Ariz.
mancus Eaton, E. 2, p. 206. Texas, Mont.
miris Eaton, E. 2, p. 221. N. H.
occidentalis Eaton, E. 2, p. 218. Col., Wy., Nev., Wash.
H. brunnea Hag., ♀ not ♂, H. 18, p. 581.
quebecensis Prov., P. 1, p. 83; E. 2, p. 297. Can.
siccus Walsh, W. 1, p. 371; E. 2, p. 208. Ill., N. C.
subnotatus Eaton, E. 2, p. 211. Col.
typicus Eaton, E. 2, p. 222. Mass.

HEPTAGENIA Walsh. [Note 5.]

- basalis* Walk., H. 1, p. 50; E. 2, p. 298. Winnipeg.
brunnea Hag., H. 18, p. 581, ♂ and ♀. Nev.
hageni Eaton, E. 2, p. 253.
canadensis Walk., H. 1, p. 47; E. 2, p. 278. Can.
cruentata Walsh, W. 2, p. 205; E. 2, p. 300. Ill.
elegantula Eaton, E. 2, p. 253. Col., Ariz.

- flavescens* Walsh, W. 1, p. 373; E. 2, p. 266. Ill.
fusca Walk., H. 1, p. 45. Can.
jejuna Eaton, E. 2, p. 252.
geminata Eaton, E. 2, p. 250. Col.
integrum Eaton, E. 2, p. 248. Oreg., Wash.
interpunctata Say, H. 1, p. 44; E. 2, p. 267. N. Y., Ill., Ind., D. C., Va.
ongimanus Eaton, E. 2, p. 245. Col.
luridipennis Burm., H. 1, p. 49; E. 2, p. 280. Can.
novaboracana Licht., H. 1, p. 50.
maculipennis Walsh, W. 2, p. 206; E. 2, p. 301. Ill.
manifesta Eaton, F. 2, p. 253. Ill.
debilis Walsh, not Walk., W. 1, p. 371.
minus Eaton, E. 2, p. 249. Col.
nitidus Eaton, E. 2, p. 246. Oreg., Cal.
par Eaton, E. 2, p. 249. Ariz.
pudica Hag., H. 18, p. 581; E. 2, p. 298. Col.
pulchella Walsh, W. 1, p. 375; E. 2, p. 299. Ill., Md., D. C., La.
quebecensis Prov., P. 1, p. 84; E. 2, p. 297. Can.
simplex Walsh, W. 2, p. 204; E. 2, p. 300. Ill.
terminata Walsh, W. 1, p. 376; E. 2, p. 299. Ill.
interpunctata Prov., not Say, P. 1, p. 83.
verticis Say, H. 1, p. 46; E. 2, p. 278. Can., N. Y., D. C., Md., Tenn., Ga.
flaveola Walk., H. 1, p. 44.
vicaria Walk., H. 1, p. 48; E. 2, p. 280. Can., D. C., Ill., Ga.
pudica Hag., H. 1, p. 39.
vitrea Walk., E. 2, p. 254. Can.

BÆTISCA Walsh.

- obesa* Say, H. 1, p. 45; E. 2, p. 226. Cal., Ill., Ind., Mich.

LEPTOPHLEBIA West.

- debilis* Walk., H. 1, p. 86; E. 2, p. 98. Nova Scotia.
gregalis Eaton, E. 2, p. 98. Mt. Hood, Oreg.
mollis Eaton, E. 2, p. 97. N. H., N. Y., N. C., Wash.
pallipes Hag., H. 18, p. 582. Nev.
memoralis Eaton, E. 2, p. 98.
 (?) *præpedita* Eaton, E. 2, p. 99. Mass.
rufivenosa Eaton, E. 2, p. 99. Cal., Wash., Oreg.
vaciva Eaton, E. 2, p. 97. Mt. Hood, Oreg.

EPHERELLA Walsh.

- consimilis* Walsh, W. 1, p. 378; E. 2, p. 130. Ill.
excrucians Walsh, W. 1, p. 397; E. 2, p. 130. Ill., Mich., N. Y.
fuscata Walk., H. 1, p. 47. Can.
walkeri Eaton, E. 2, p. 129.
grandis Eaton, E. 2, p. 128. Col.
inermis Eaton, E. 2, p. 127. Col.
invaria Walk., H. 1, p. 48; E. 2, p. 129. Can.

BÆTIS Lach.

- bioculata* Pict., H. 1, p. 53; E. 2, p. 158. Can.
fluctuans Walsh, W. 1, p. 379. Ill.
posticata Say, H. 1, p. 53; E. 2, p. 169. Ind.
propinqua Walsh, W. 2, p. 207; E. 2, p. 169. Ill.
vicina Walsh, not Hag., W. 1, p. 380.
pygmæa Hag., H. 1, p. 54; E. 2, p. 170. Can.
rubescens Prov., P. 1, p. 84; E. 2, p. 169. Can.
unicolor Hag., H., 1, p. 54. D. C.
hageni Eaton, E. 2, p. 169.

CENTROPTILUM Eaton.

- luteolum* Muell., E. 2, p. 175. Arctic America.

CALLIBÆTIS Eaton.

- pictus* Eaton, E. 2, p. 190. Cal., Tex.
tessalata Hag., H. 1, p. 50. Cal., Wash.
hageni Eaton, E. 2, p. 192.
ferruginea Walsh, W. 1, p. 379; E. 2, p. 193. Ill., Can., N. Y.
undata Hag., not Pict., H. 1, p. 53.

CLEON Leach.

- dubium* Walsh, W. 1, p. 380; E. 2, p. 190. Ill.
mendax Walsh, W. 1, p. 381; E. 2, p. 190. Ill., Mich., Mass.
vicinum Hag., H. 1, p. 54; E. 2, p. 190. D. C.

CÆNIS Steph.

- diminuta* Walk., H. 1, p. 55; E. 2, p. 147. Fla., Pa., N. Y., D. C.
amica Hag., H. 1, p. 55.
hilaris Say, H. 1, p. 54; E. 2, p. 147. Ind., N. Y.; Ill.

CALOPTERYGIDÆ.**CALOPTERYX** Leach.

- æquabilis* Say, H. 31, p. 246. Can., Me., Mass.
virginica Selys, in part.
hudsonica Hag., H. 31, p. 247. Lake Superior.
virginica Selys, in part.
yakima Hag., H. 31, p. 248. Wash.
amata Hag., H. 31, p. 244. N. H.
angustipennis Selys, H. 1, p. 56; H. 31, p. 242. Ky., Ga.
dimidiata Burm., H. 1, p. 57; H. 31, p. 245. Ky., Ga., Fla.
apicalis Burm., H. 1, p. 56; H. 31, p. 246. Pa., Del., Mass.
maculata Beauv., H. 1, p. 57; H. 31, p. 249. Eastern United States.
virginica Selys, in part.

HETÆRINA Hagen.

- americana* Fab., H. 1, p. 60. Mass., Me., Md., D. C., Ind., Ill., Wis., Mo.
pseudamericana Walsh, W. 2, p. 223.

- basalis* Hag. H. 1, p. 60. Texas.
texana Walsh, W. 2, p. 237.
bipartita Selys, S. 3, p. 17. Texas.
californica Selys, H. 1, p. 59. Cal., Mont., Yellowstone.
sclerata Walsh, W. 2, p. 227. Ill.
sempronia Selys, H. 1, p. 62. Texas.
septentrionalis Selys, H. 1, p. 59. Ga.
titia Drury, H. 1, p. 61. Texas.
tricolor Burm., H. 1, p. 61. Pa., Ill., Ga., Texas.
rupamensis Walsh, W. 2, p. 230.
rupinsulensis Walsh, W. 1, p. 383.
limbata Selys, S. 3, p. 49.

AGRIONIDÆ.

ARCHILESTES Selys.

- grandis* Ramb., H. 1, p. 66; S. 1, p. 202. Texas.

LESTES Leach.

- alacris* Hag., H. 1, p. 67; S. 1a, p. 212. Texas.
congener Hag., H. 1, p. 67; S. 1a, p. 224. N. Y., Del., Mo.
disjuncta Selys, S. 1a, p. 210. Nova Scotia, Me., Ill., D. C.
eurina Say, H. 1, p. 70; S. 1a, p. 224; Scudd., 2, p. 66. Ill., N. Y., Me.
forcipata Ramb., S. 1a, p. 211. N. J., Ga., Ill.
hamata Hag., H. 1, p. 70.
hamata Selys, S. 1a, p. 208. D. C., Ill., Mo., N. Y., Me.
forcipata Hag., not Ramb., H. 1, p. 71.
inæqualis Walsh, W. 1, p. 385. Ill., Me.
rectangularis Say, H. 1, p. 66; S. 1a, p. 214. Ind., Mass., Md., N. Y., D. C., Ill., Ga., Me.
simplex Hag., H. 1, p. 68; S. 1a, p. 206. Texas.
stulta Hag., H. 1, p. 67; S. 1a, p. 212. Cal. [Note 6.]
unguiculata Hag., H. 1, p. 70; S. 1a, p. 207. N. J., Mo., Me., Ill.
vidua Hag., H. 1, p. 69; S. 1a, p. 225. La. [Note 6.]
vigilax Hag., S. 1a, p. 214. N. J., Fla.

ARGIA Ramb.

- apicalis* Say, H. 1, p. 91; S. 1a, p. 414. Va., D. C., Mo., La., Me.
bipunctulata Hag., H. 1, p. 90; S. 1a, p. 415. N. J., Ga., N. Y.
fumipennis Burm., H. 1, p. 97; S. 1a, p. 405. Ky., Ga., Fla.
mœsta Hag., H. 1, p. 94; S. 1a, p. 384. Texas.
putrida Hag., H. 1, p. 96; S. 1a, p. 385. Md., Va., Wis., Ill., Texas, Me.
sedula Hag., H. 1, p. 94; S. 1a, p. 411. Va., Texas.
tibialis Ramb., S. 1a, p. 413. Va., Ill., Ga., Fla.
fontium Hag., H. 1, p. 91.
binotatum Walsh, W. 1, p. 387.
violacea Hag., H. 1, p. 80; S. 1a, p. 404. Md., Va., D. C., N. Y., Me.
vidua Hag., S. 1a, p. 406. Texas, Cal.

ANOMALAGRION Selys.

hastatum Say, H. 1, p. 77; S. 1b, 255. N. J., Md., Pa., Ind., Fla., La., Texas.

ICHNURA Charp.

cervula Selys, S. 1b, p. 262. Cal.

defixa Hag., H. 1, p. 80; S. 1b, p. 261. Cal.

perparva McLach., S. 1b, p. 263. Texas.

prognatha Hag., H. 1, p. 83; S. 1b, p. 259. Va.

ramburi Selys, S. 1b, p. 272. N. Y., Md., La., Fla., Me.

iners Hag., H. 1, p. 75.

credulum Hag., H. 1, p. 80.

verticalis Say, H. 1, p. 82; S. 1b, p. 265. Eastern U. S.

ramburi Hag., n6t Selys, H. 1, p. 76.

AMPHIAGRION Selys.

saucium Burm., H. 1, p. 85; S. 1b, p. 285. Me., Mass., N. Y., Ill., Md., Pa., D. C.

OXYAGRION Selys.

rufulum Hag., H. 1, p. 86; S. 1b, p. 302. Cal.

NEHALENNIA Selys.

irene Hag. H. 1, p. 74; S. 1b, p. 1240. Ill., Wis., N. J.; Me., Mass., N. Y., Fla.

posita Hag., H. 1, p. 77; S. 1b, p. 1242. Mass., Pa., D. C., Ga.

PYRRHOSOMA Charp.

abbreviata Selys, S. 1b, p. 1299. Cal.

ERYTHROMMA Selys.

(?) *condita* Hag., S. 1b, p. 1305. Md., D. C., N. Y., Me.

ENALLAGMA Selys.

annexa Hag., H. 1, p. 87; S. 1b, p. 506. Mass., N. H., Me. [Note 7.]

aspersa Hag., H. p. 97; S. 1b, p. 518. N. Y., N. J., Ill.

boreale Selys, S. 1b, p. 507. Newfoundland. [Note 7.]

civile Hag., H. 1, p. 88; S. 1b, p. 514. N. Y., Pa., Md., D. C., Va., Mo., Texas. Me., Can.

canadensis Prov., P. 1, p. 94.

divagans Selys, S. 1b, p. 521. Mass.

doubledayi Selys, H. 1, p. 89; S. 1b, p. 502. Fla.

dura Hag., H. 1, p. 87; S. 1b, p. 500. Md., La., Fla.

ebria Hag., H. 1, p. 89; S. 1b, p. 513. Ill., Mo., N. Y., Me.

exsulans Hag., H. 1, p. 82; S. 1b, p. 522. Pa., Md., D. C., Va., Ill., Mo., Tex., Me.

hageni Walsh, W. 1, p. 386; S. 1b, p. 512. Can., Mass., Md., Ill., Mo., Me.

polluta Hag., H. 1, p. 83; S. 1b, p. 527. Fla., Me.

prævara Hag., H. 1, p. 88; S. 1b, p. 516. La.

robusta Selys, S. 1b, p. 509. Cal. [Note 7.]

signata Hag., H. 1, p. 84; S. 1b, p. 525. N. Y., Ill., Mo., Ga., La., Me., Md.

dentiferum Walsh, W. 2, p. 256.
traviata Selys, S. 1b, p. 519. Mass., N. Y.
aspersum Hag. (in part).

AGRION Selys.

interrogatum Hag., S. 1b, p. 1254. Sâskatschewan.
resolutum Hag., S. 1b, p. 1263. Brit. Am.
 (?) *exclamationis* Selys, S. 1b, p. 1251. Cal.
 (?) *antennatum* Say, H. 1, p. 73. Ind.

ERYTHRAGRION Selys.

salvum Hag., H. 1, p. 85; S. 1c, p. 962. Texas.
boucardi Selys.

GOMPHIDÆ.

HERPETOGOMPHUS Selys.

compositus Selys, H. 1, p. 99; S. 8, p. 740. Texas, Oreg., Yellowstone.
designatus Selys, H. 1, p. 99. Texas.

OPHIOGOMPHUS Selys.

bison Selys, S. 9, p. 496; S. 10, p. 436. Cal.
colubrinus Selys, H. 1, p. 101; S. 10, 438. Can., Brit. Am., N. H.
mainensis Walsh, W. 2, p. 255; S. 10, p. 435. Me.
morrisoni Selys, S. 11, p. lxxv. Nev.
rupinsulensis Walsh, W. 1, p. 388; S. 10, p. 434. Ill., Wis., Me., Can., N. Y.
severus Hag., H. 18, p. 591. Col., Mont., N. Mex., Yellowstone.

OCTOGOMPHUS Selys.

specularis Selys, H. 1, p. 110; S. 8, p. 760. Cal.

DROMOGOMPHUS Selys.

armatus Selys, H. 1, p. 102; S. 10, p. 467. Ga.
spinosus Selys, H. 1, p. 102. Ga., Ky., Texas, Ill., W. Va., Me.
spoliatus Selys, H. 1, p. 103. Texas.

GOMPHUS Leach.

abbreviatus Hag., S. 10, p. 464. Me.
albistylus Hag., S. 10, p. 460. Me.
adelphus Selys, H. 1, p. 104; S. 10, p. 457. N. Y.
amnicola Walsh, W. 1, p. 396. Ill.
brevis Hag., S. 10, p. 462. N. Y., Can., Me.
confraternus Selys, S. 8, p. 744. Cal.
consanguis Selys, S. 11, p. lxxvi. N. Car.
crassus Hag., S. 10, p. 453. Ky.
dilatatus Ramb., H. 1, p. 103. Ga., Fla., Mich.
exilis Selys, H. 1, p. 108; S. 8, p. 778. Md., Mass., Me.
externus Selys, H. 1, p. 104; S. 10, p. 452. N. Mex., Texas, Neb., Ill.
consobrinus Walsh, W. 2, p. 242.

- fraternus* Say, H. 1, p. 104. N. Y., Ill., N. H., Texas (?).
furcifer Hag., S. 10, p. 458. Mass., Mich.
graslinellus Walsh, W. 1, p. 394. Ill.
intricatus Selys, H. 1, p. 108. Texas, Mo.
lividus Selys, H. 1, p. 106. S. Car., D. C., Mass.
militaris Selys, H. 1, p. 107. Texas.
minutus Ramb., H. 1, p. 108. Ga.
nævius Hag., S. 10, p. 462. Pa., Me.
notatus Ramb., H. 1, p. 110; S. 10, p. 466. Ill., Mich., Can.
fluvialis Walsh, W. 1, p. 394.
olivaceus Selys, S. 8, p. 749. Cal.
pallidus Ramb., H. 1, p. 105. Ga., La.
pilipes Selys, H. 1, p. 106.
parvulus Selys, H. 1, p. 109; S. 10, p. 459. Nova Scotia, N. H., Me., Pa.
plagiatus Selys, H. 1, p. 109; S. 10, p. 465. Md., S. Car.
quadricolor Walsh, W. 2, p. 246. Ill., Mass., Mich.
scudderi Selys, S. 8, p. 752. U. S. [No definite locality.]
sobrinus Selys, S. 8, p. 745. Cal.
spicatus Selys, H. 1, p. 107; S. 7, p. 183. Can., Mass., N. Y.
spiniceps Walsh, W. 1, p. 389; S. 8, p. 750. Ill., Mass.
vastus Walsh, W. 1, p. 391. Ill., N. Y., Mass., D. C., Md.
ventricosus Walsh, W. 2, p. 249; S. 10, p. 453. Ill., Mich., Mass., Va.
villosipes Selys, H. 1, p. 105. Mass., Mich.

PROGOMPHUS Selys.

- obscurus* Ramb., H. 1, 110; S. 10, 658. Ga., Texas, Oreg., Mass. (?)
borealis Selys, S. 8, p. 764.

GOMPHOIDES Selys.

- stigmata* Say, H. 1, p. 111. Texas.

HAGENIUS Selys.

- brevistylus* Selys, H. 1, p. 114. N. Y., Mass., Wis., Can., Md., Kan., Tex., Me.

TACHOPTERYX Hag.

- hageni* Selys, S. 11, p. lxviii. Nev.
thoreyi Selys, H. 1, p. 117; S. 10, p. 696. Mass., N. Y., Md., Ky.

CORDULEGASTERIDÆ.

CORDULEGASTER Leach.

- diastatops* Selys, S. 10, p. 685. D. C., N. H., Mass., Can., Me.
lateralis Scudd., Scudd. 1, p. 211.
dorsalis Selys, H. 1, p. 116; S. 8, p. 772. Oreg., Alaska.
erroneus Hag., S. 10, p. 688. N. C., Ky.
fasciatus Ramb., S. 10, p. 692. Ga.
maculatus Selys, H. 1, p. 115; S. 10, p. 689. Mass., Conn., Md., Ga., Can., Me.
obliquus Say, H. 1, p. 116; S. 10, p. 692. Ind., Ill., Mass., Me., Can.
sayi Selys, H. 1, p. 115; S. 10, p. 686. N. H., Md., Mass., Me., Can., Ga.

ÆSCHNIDÆ.**ANAX** Leach.

- junius* Drury, H. 1, p. 118; H. 31, p. 305. U. S., Can.
longipes Hag., H. 1, p. 118; H. 31, p. 303. Mass., Md., Ga., Fla.
concolor Brauer, H. 31, p. 304.
walsinghami McLach., McL. 8, p. 127; H. 31, p. 306. Cal., Ariz., N. Mex.
validus Hag. mss.

GOMPHÆSCHNA Hag.

- antelope* Hag., H. 17, p. 354. Md.
furcillata Say, H. 1, p. 131; H. 17, p. 351. Mass., Mich., Ga.

NEURÆSCHNA Hag.

- vinosa* Say. Can., Me., N. Y., Mass., Pa., Md., D. C., Car., Ga., Ky.
quadriguttata Burm., H. 1, p. 130.

BASILÆSCHNA Selys.

- janata* Say, H. 1, p. 125. Mass., N. H., N. J., Me.

ÆSCHNA Fab.

- constricta* Say, H. 1, p. 123. U. S., Can., Brit. Am.
contorta Hag., H. 1, 126.
palmata Hag., Stett. Z. xvii, p. 369.
arundinacinea Selys, Ann. Soc. Ent. Belg. xvii, 36.
clepsydra Say, H. 1, p. 122. Northeastern U. S.
propinqua Scudd., ♀, Scudd. 1, p. 215.
crenata Hag., Stett. Z. xvii, p. 369. N. H., Arctic America.
eremita Scudd., Scudd. 1, p. 213.
heros Fab., H. 1, p. 128. Eastern U. S. [Note 8.]
ingens Ramb., H. 1, p. 128. Ga., Fla., La.
abbotti Hag., H. 17, p. 350.
junceae Linn., H., 1, p. 120. N. H., Boreal America.
hudsonica Hag., H. 1, p. 123.
propinqua Scudd., ♂ in part, Scudd. 1, p. 215.
multicolor Hag., H. 1, p. 121. N. Mex., Mont., Yellowstone.
mutata Hag., H. 1, p. 124. N. Am. [no definite locality.]
pentacantha Ramb., H. 1, p. 129. Ill., La., Texas.
septentrionalis Burm., H. 1, p. 120; H. 31, p. 354. N. H., British America, Newfoundland.
sitchensis Hag., H. 1, p. 119; H. 31, p. 353. Alaska, Brit. Am.
verticalis Hag., H. 1, p. 122. Northern U. S.
clepsydra Walsh, not Say.
propinqua Scudd., ♂ in part, Scudd. 1, p. 215.
virens Ramb., H. 1, p. 127. Ga. (?)
grandis Linné, H. 1, p. 126. N. J. [locality probably wrong], European.

CORDULIDÆ.**MACROMIA** Ramb.*Didymops.**Epopthalmia.**annulata* Hag., H. 1, p. 132; S. 4, p. 544. Texas, Ill.*flavipennis* Walsh, W. 1, p. 398.*georgiana* Selys, S. 6, p. 197. Ga.*illinoensis* Walsh, W. 1, p. 397. N. H., Mass., Pa., Tenn., Ill.*magnifica* Selys, S. 5, p. 22. Cal.*pacifica* Hag., H. 1, p. 133; S. 4, p. 542. Texas, Cal.*tæniolata* Ramb., H. 1, p. 132; S. 4, p. 527. Pa., Md., Ga.*transversa* Say, H. 1, p. 135; S. 4, p. 548. Vt., Mass., N. Y., Pa., D. C., S. C., Ga., Ky., Mich.**EPITHECA** Charp.*Somatochlora.**albicineta* Burm., H. 1, p. 138; S. 4, p. 303. N. H., Labrador, Alaska.*eremita* Scudd., Scudd. 1, p. 215.*cingulata* Selys, S. 4, p. 302; S. 6, p. 195. Labrador, Newfoundland, N. H.*elongata* Scudd., Scudd. 1, p. 218; S. 4, p. 292. N. H., Nova Scotia, Wis.*saturata* Hag. mss.*filosa* Hag., H. 1, p. 136; S. 4, p. 287. Md., Ga.*forcipata* Scudd., Scudd. 1, p. 216; S. 6, p. 194. N. H., Me., Nova Scotia, Br. A.*chalybea* Hag. mss.*franklini* Selys, S. 6, p. 195. Brit. Am.*septentrionalis* Selys (in part), S. 4, p. 298; S. 5, p. 20.*hudsonica* Selys, S. 4, p. 301. Brit. Am.*linearis* Hag., H. 1, p. 137; S. 6, p. 193. Ill., Mo., Pa., Ga.*procera* Selys, S. 4, p. 285.*nasalis* Selys, S. 5, p. 21. N. Am. [no definite locality.] ♀*obsoleta* Say, H. 1, p. 136; S. 4, p. 279; H. 31, p. 369. Ind., Mass., Ill., La.*molesta* Walsh, W. 2, p. 254.*semicircularis* Selys, S. 4, p. 295; S. 6, p. 194. Col., Brit. Am., Utah.*septentrionalis* Selys, S. 4, p. 298; S. 6, p. 195. Labrador, Brit. Am.*richardsoni* Hag. mss.*tenebrosa* Say, H. 1, p. 137; S. 4, p. 289. Nova Scotia, Md., N. J., Ind. Ill.*walshii* Scudd., Scudd. 1, p. 217; S. 4, p. 293. N. H.*yamaskanensis* Prov., P. 1, 104; S. 6, p. 191; H. 31, p. 367. Can.**CORDULIA** Leach.*Tetragoneura.**costalis* Selys, S. 4, p. 275; S. 5, p. 20. Ga.*cynosura* Say, S. 4, p. 270. Me., Mass., N. Y., Mich., Ohio, Ill., Pa., Ga., La., Fla.*lateralis* Hag., H. 1, p. 139.*basigutta* Selys, S. 4, p. 271.*lepida* Selys, S. 4, p. 264. Me., Mass., Conn., N. Y., N. J., Md.*libera* Hag., S. 4, p. 263. Can., Mich.*lintneri* Hag., S. 6, p. 187; H. 31, p. 371. N. Y., Saskatchewan.

- nannodiplax vacua* Hag., H. 8, p. 91; H. 31, p. 248.
selysi Hag., S. 6, p. 189. Ga.
semiaqua Burm., H. 1, p. 140; S. 4, p. 272. Nova Scotia, Mass., N. Y., D. C., S. C., Ga., Fla.
diffinis Hag. mss.
complanata Ramb., S. 4, p. 273.
shurtleffi Scudd., Scudd. 1, p. 271; S. 4, p. 265. N. H., Nova Scotia, Can., Brit. Amer.
bifurcata Hag. mss.
spinigera Selys, S. 4, p. 269; S. 5, p. 20. Can., Ga., Mich., Vancouver.
spinosa Hag., S. 6, p. 188. Ga.
uhleri Selys, S. 4, p. 274. Me., Mass., N. J.

LIBELLULIDÆ.

PANTALA Hag.

- flavescens* Fab., H. 1, p. 142. Southern States.
hymenæa Say, H. 1, p. 142. Ind., Ill., Texas.

TRAMEA Hag.

- abdominalis* Ramb., H. 1, p. 145. Mass., Fla.
insularis Scudd., not Hag., ♀, Scudd. 1, p. 191.
carolina Linn., H. 1, p. 143. Mass., N. Y., N. J., Southern States.
chinensis De Geer, H. 1, p. 144. Carolina (?).
insularis Hag., H. 1, p. 186. Fla.
lacerata Hag., H. 1, p. 145. Ill., Texas, Md., Mich., N. Y.
onusta Hag., H. 1, p. 144. Mo., Fla., Texas.

CELITHEMIS Hag.

- amanda* Hag., H. 1, p. 183. Ga., N. J.
balteata Hag., H. 1, p. 140. Texas, Fla.
elisa Hag., H. 1, p. 182. Mass., N. Y., Can., Mich., Ill., Ga., Me.
eponina Drury, H. 1, p. 147. U. S. east of Rocky Mountains.
fasciata Kirb., Kirb. 1, p. 326. Can., Ga., Fla.
ornata Ramb., H. 1, p. 182. Pa., Ga., Fla., Me.

PERITHEMIS Hag.

- domitia* Drury, H. 1, p. 185. Eastern U. S.

LIBELLULA Linn.

Plathemis. [Note 4.]

- frimaculatus* De Geer, H. 1, p. 149. U. S. east of Rocky Mountains.
subornata Hag., H. 1, p. 149. Cal., N. Mex., Texas, Kan., Ariz.
axillena West., H. 1, p. 156. Ga., La., Fla., Texas. [Note 10.]
auripennis Burm., H. 1, p. 155. Atlantic and Gulf States south of N. Y.
basalis Say. N. Y., N. J., Pa., Md., D. C., Va., Can., Mich., Ill., Kan.
luctuosa Burm., H. 1, p. 152.
composita Hag., H. 12, p. 728. Yellowstone.
deplanata Ramb., H. 1, p. 154. Pa., Ga., N. C.
exusta Say. Me., Mass., Wis., Brit. Am., Can. Wash.
julia Uhler, H. 1, p. 153.

- flavida* Ramb., H. 1, p. 156. Texas, Yellowstone, Mont.
forensis Hag., H. 1, p. 154; H. 18, p. 585. Ariz., Cal., Brit. Am., Yellowstone, Mont.
incesta Hag., H. 1, p. 155; H. 31, p. 384. N. H., Mass., Car., Texas, Can., Fla., Me. [Note 10.]
lydia Drury, H. 1, p. 155. South Atlantic and Gulf States.
nodisticta Hag., H. 1, p. 151; H. 18, p. 583. Yellowstone, Mont.
odiosa Hag., H. 1, p. 152. Texas.
plumbea Uhl., H. 1, p. 157. N. J., Md., Ga.
pulchella Drury, H. 1, p. 153. U. S. east of Rocky Mountains and Utah.
quadrinaculata Linn., H. 1, p. 150. Mass., Mich., Ill., Can., Wis., Idaho, Wy., Utah, Me.
quadrupla Say, H. 1, p. 157. Mass., N. J., Md.
saturata Uhler, H. 1, p. 152; H. 18, p. 586. Ariz., Yellowstone, Mont.
semifasciata Burm., H. 1, p. 151. Mass., N. Y., N. J., Md., D. C., Car., Fla., Texas, Mich., Ill., Me.

ORTHEMIS Hagen.

- discolor* Burm., H. 1, p. 160. Fla., Texas.

DYTHEMIS Hagen.

- fugax* Hag., H. 1, p. 163. Texas.
mendax Hag., H. 1, p. 164. Ariz., Texas.
velox Hag., H. 1, p. 163. Texas.

TRITHEMIS Hagen.

- umbrata* Linn., H. 1, p. 158. Ga. (?)

LEPTHEMIS Hagen.

- gravida* Calvert, Cal. 1, p. 35. Texas, Fla.
hæmatogastra Burm., H. 1, p. 161. Ga. (?)

MESOTHEMIS Hagen.

- collocata* Hag., H. 1, p. 171. Texas, Yellowstone, Cal., Ariz.
illota Hag., H. 1, p. 172. Cal., Vancouver, Yellowstone.
longipennis Burm., H. 1, p. 173. Eastern U. S., Texas, Mont., Cal.
simplicicollis Say, H. 1, p. 170. Eastern U. S., Texas, Mont., Utah.
gundlachi Scudd., Scudd. 1, p. 195.

DIPLAX Charp.

Leucorrhinia. [Note 11.]

- albifrons* Charp., H. 1, p. 177. Ga., Mo., Texas, Mass.
assimilis Uhl., H. 1, p. 174. Ill., D. C., Mo., Md., Pa., Wis.
atripes Hag., H. 18, p. 588. Yellowstone.
borealis Hag., H. 32, p. 231. Brit. Am.
berenice Drury, H. 1, p. 178. Mass., N. Y., N. J., Md., Va.
corrupta Hag., H. 1, p. 171. Ill., Kan., Col., La., Texas, Mont., Cal.
costifera Hag., H. 1, p. 175. Me., Mass., N. Y., N. Red River.
decisa Hag., H. 18, p. 588. Dak., Col., Yellowstone.
frigida Hag., H. 32, p. 231. Mass., Can., Dak., Brit. Am.
glacialis Hag., H. 32, p. 234. Nova Scotia, Can., N. H., Mass., Nev.

- hudsonica* Selys, H. 1, p. 180; H. 32, p. 233. Nova Scotia, Br. Am., Me., Mass.
hageni Calvert, Cal. 1, p. 36.
intacta Hag., H. 1, p. 179; H. 32, p. 235. Northern U. S., Can.
madida Hag., H. 1, p. 174; H. 31, p. 385. Dak., Mont., Yellowstone, Cal., Vancouver.
flavicosta Hag., H. 31, p. 386.
minuscule Ramb., H. 1, p. 183. Ga., Ky., Fla.
obtrusa Hag., H. 8, p. 95. Mass., Ill., Can.
pallipes Hag., H. 18, p. 589. Col., Texas.
proxima Calvert, Cal. 1, p. 38; H., 32, p. 232. Nova Scotia, Me., Mass., N. H., Brit. Am., Wash.
rubicundula Say, H. 1, p. 176; H. 31, p. 385. Eastern U. S., Can.
scotia Donovan, H. 1, p. 179. Can., N. Red River, Yellowstone (?)
semicincta Say, H. 1, p. 176. Me., Mass., N. H., N. Y., Pa., Md.
vicina Hag., H. 1, p. 175. Me., Mass., N. Y., N. J., Pa., Md., D. C., Ill., Can.
imbuta Say, H. 1, p. 185. Md. [Note 12.]

NANNOTHEMIS Brauer.

- bella* Uhl., H. 1, p. 186. Me., Mass., N. Y., Ct., N. J., Md., Ga., Can.
maculosa Hag., H. 1, p. 187. Ga.

SIALIDÆ.**SIALIS** Latr.

- infumata* Newm., H. 1, p. 188. U. S.
americana Ramb., H. 1, p. 188. Ga., Pa.

CHAULIODES Latr.

- angusticollis* Hag., H. 1, p. 191. Ga., Va., Ill.
californicus Walk., H. 1, p. 190. Cal.
lunatus Hag. Eastern U. S.
serricornis Hag., not Say, H. 1, p. 190.
pectinicornis Linn., H. 1, p. 189. Atlantic States.
rastricornis Ramb., H. 1, p. 189. Ga., S. C.
serricornis Say. Pa., Ga., Md., Mass., N. Y.
maculatus Ramb. and Hagen, H. 1, p. 191.
virginiensis Westw., H. 1, p. 190. Va.
disjunctus Walk., W. 1, p. 334. Vancouver's Island.

CORYDALIS Latr.

- cornuta* Linn., H. 1, p. 192. Eastern U. S.
cognata Hag., H. 1, p. 193. N. Mex.

RAPHIDIDÆ.**RAPHIDIA** Linn.

- adnixa* Hag., H. 1, p. 195; Alb. 1, p. 146. Cal., Oreg., Wash.
bicolor Alb., Alb. 1, p. 152. Col.
assimilis Alb., Alb. 1, p. 144. Vancouver Island.
media Burm., H. 1, p. 195. N. Am. [no definite locality.]
oblita Hag., H. 1, p. 195; Alb. 1, p. 149. Cal., Oreg., Wash., Col.

INOCELLIA Schn.

hageni Alb., Alb. 1, p. 171. Cal.

inflata Hag., H. 1, p. 196; Alb. 1, p. 167. Cal., Wash., Ariz.

longicornis Alb., Alb. 1, p. 169. Cal.

MANTISPIDÆ.**MANTISPA** Ill.

brunnea Say, H. 1, p. 207. U. S.

burquei Prov., P. 1, p. 247.

interrupta Say, H. 1, p. 209. Pa., Va., Texas,

mœsta Hag., H. 1, p. 210. Tenn.

viridis Walk., H. 1, p. 209. Fla.

SYMPHASIS Hagen.

signata Hag., H. 21, p. 208. Cal.

CONIOPTERYGIDÆ.**ALEURONIA** Fitch.

westwoodii Fitch, H. 1, p. 196. U. S.

CONIOPTERYX Halid.

vicina Hag., H. 1, p. 197. D. C.

CHRYSOPIDÆ.**MELEOMA** Fitch.

signoretii Fitch, H. 1, p. 200. Vt.

NOTHOCHRYSA McLach.

californica. [Note 13.]

CHRYSOPA Leach.Group *oculata*.

oculata Say, H. 1, p. 211. U. S.

albicornis Fitch, H. 1, p. 212. Miss.

latipennis Schn., H. 1, p. 214. Pa., N. Y., Can.

illepida Fitch, H. 1, p. 212. N. Y., Ill. [Note 14.]

fulvibucca Fitch, H. 1, p. 212. N. Y.

chi Fitch, H. 1, p. 213. N. Y.

ypsilon Fitch, H. 1, p. 213. N. Y., D. C.

mississippiensis Fitch, H. 1, p. 213. Miss.

transmarina Hag., H. 1, p. 213. Can.

chlorophana Burm., H. 1, p. 212. N. Y., Mich.

Group *nigricornis*.

nigricornis Burm., H. 1, p. 214. Atlantic States.

pavida Hag., H. 1, p. 216. S. C.

ampla Walk., H. 1, p. 215. Ga.

cubana Hag., H. 1, p. 215. Va.

lineaticornis Fitch, H. 1, p. 215. N. Y.

Group *ruflabris*.

- ruflabris* Burm., H. 1, p. 219. Eastern U. S.
quadripunctata Burm., H. 1, 218. S. C., D. C., Pa., N. Y.
emuncta Fitch, H. 1, p. 220. N. Y.
attenuata Walk., H. 1, p. 220. Fla., Va.
interrupta Schn., H. 1, p. 220. Pa., N. Y.
virginica Fitch, H. 1, p. 219. Va.
sulphurea Fitch, H. 1, p. 219. N. J.
repleta Walk., H. 1, p. 220. Ga.

Group *plorabunda*.

- plorabunda* Fitch, H. 1, p. 221. N. Y., Ill.
illinoiensis Shimer, Shim. 1, p. 208.
externa Hag., H. 1, p. 221. D. C., Cal.
flava Scop., H. 1, p. 222. Pa.
harrisii Fitch, H. 1, p. 221. N. Y.
robertsonii Fitch, H. 1, p. 221. Ind. Terr.
pseudographa Fitch, H. 1, p. 222. Ill.

Not placed.

- longicornis* Walk., H. 1, p. 210. Ga.
punctinervis McLach., McL. 10, p. 24. Texas.
citri Ashm., Ash. 2. Fla.

HEMEROBIDÆ.**POLYSTOCHOTES** Burm.

- punctatus* Fab., H. 1, p. 206. U. S.
vittatus Say, H. 1, p. 207. Pa., N. J.

HEMEROBIUS Linn.

- alternatus* Fitch, H. 1, p. 201. N. Y.
amiculus Fitch, H. 1, p. 200. N. Y., Ill.
castaneæ Fitch, H. 1, p. 202. Northern States.
citrinus Hag., H. 1, p. 204. N. Am. [no definite locality.]
conjunctus Fitch, H. 1, p. 203. N. Y.
longicollis Walk., H. 1, p. 200. Ga.
longifrons Walk., H. 1, p. 206. Can., N. Y.
occidentalis Fitch, H. 1, p. 201. Ill., D. C.
perparvus McLach., McL. 10, p. 22. Texas.
stigmaterus Fitch, H. 1, p. 202. Northern States.
tutatrix Fitch, H. 1, p. 202. N. Y., D. C., Cal.
pinidumus Fitch, H. 4, p. 203. N. Y.
hyalinatus Fitch, H. 1, p. 203. N. Y.
posticus Walk., H. 1, p. 204. Ga.
simulans Walk., H. 1, p. 204. Can.
marginatus Walk., H. 1, p. 205. Nova Scotia.
humuli Walk., H. 1, p. 205. Ga.
crispus Walk., H. 1, p. 205. Nova Scotia.
obliteratus Walk., H. 1, p. 205. Ga.

PSECTRA Hagen.

diptera Linn., H. 29, p. 21. Ill., Me., Mich.

delicatulus Fitch, H. 1, p. 201.

MICROMUS Ramb.

angulatus Steph., H. 28, p. 280. N. H., Can.

angustus Hag., H. 28, p. 287. Fla., N. C.

(?) *subanticus* Walk., H. 1, p. 203.

insipidus Hag., H. 1, p. 199; H. 28, p. 285. Eastern U. S.

sobrius Hag., H. 1, p. 199.

montanus Hag., H. 28, p. 279. Mass., N. H.

variolosus Hag., H. 28, p. 284. Col.

SISYRA Burm.

vicaria Walk., H. 1, p. 197. Ga., N. Y.

DILAR Ramb.

americana McLach., McL. 7, p. 55. Ky.

CLIMACIA McLach.

areolaris Hag., H. 1, p. 199; McL. 10, p. 21. Southern States.

BERÓTHA Walk.

Isosclepiteron Costa.

pennsylvanicum Brauer, Brauer 1, p. 898. Pa.

flavicornis Walk., H. 1, p. 193. Southern States.

hamatus Walk., H. 1, p. 199. N. Am. [no definite locality.]

MYRMELEONIDÆ.**MYRMELEONINÆ.****ACANTHACLISIS** Ramb.

americana Drury, H. 1, p. 223; H. 30, p. 134. N. Y., N. C., S. C., Ga., Fla.

texana Hag., H. 30, p. 147. Texas.

congener Hag., H. 1, p. 224; H. 30, p. 154. N. Mex., Oreg., Wash.

DENDROLEON Hagen.

(?) *gratus* Say, H. 1, p. 225. Ind., Mo., Pa., Miss., Fla.

obsoletus Say, H. 1, p. 225; H. 30, p. 187. Eastern U. S.

MARACANDA McLach.

conspersa Ramb., H. 30, p. 212. Eastern U. S.

nebulosus Oliv., H. 1, p. 228.

contaminatus Burm., H. 1, p. 227.

signata Hag., H. 30, p. 215. Mich.

henshawii Hag., H. 30, p. 216. Oreg.

BRACHYNEMURUS Hagen.

- abdominalis Say, H. 1, p. 226; H. 30, p. 57. U. S.
juvencus Hag., H. 1, p. 234.
 blandus Hag., H. 1, p. 235; H. 30, p. 73. N. Mex., Wy., Idaho, Nev.
 carrizonus Hag., H. 30, p. 93. Texas.
 longipalpis Hag., H. 30, p. 95. Cal., Nev.
 longicaudus Burm., H. 1, p. 227; H. 30, p. 35. Ga., Fla.
 nebulosus Ramb., H. 1, p. 228; H. 30, p. 36. Ga., D. C., S. C.
salvus Hag., H. 1, p. 227.
 nigrilabris Hag., H. 30, p. 72. N. Mex., Col., Wy., Utah, Dak.
 peregrinus Hag., H. 1, p. 234; H. 30, p. 59. Western States.
 sackeni Hag., H. 30, p. 94. Texas, Cal., Ariz.
 (?) inscriptus Hag., H. 1, p. 230. N. Mex.
 (?) pumilis Burm., H. 1, p. 230. S. C.

MYRMELEON Linn.

- immaculatus De Geer, H. 1, p. 231; H. 30, p. 188. U. S.
 mobilis Hag., H. 30, p. 204. Ga., Ala.
immaculatus Burm. and Hag. (in part)
 rusticus Hag., H. 1, p. 233; H. 30, p. 210. Texas, N. Mex.
 (?) ingeniosus Hag., H. 1, p. 236. S. C., Fla.
 exitialis Walk., H. 1, p. 229. Cal.
 ferox Walk., H. 1, p. 229. Cal.
 tectus Walk., H. 1, p. 232. Fla.
 crudelis Walk., H. 1, p. 232. Fla.
 diversus Hag., H. 12, p. 729. Yellowstone.

ASCALAPHINÆ.*Holophthalmi.***PTYNX** Lefeb.

- appendiculatus Fab., McL. 6, p. 239. Ga.
 juvenilis McLach., McL. 6, p. 239. Texas.
 furcifer McLach., McL. 9, p. 509. Ariz.

*Schizophthalmi.***ULULA** Ramb.

- hyalina Latr., H. 1, p. 238; McL. 6, p. 246. Southern States.
 quadripunctata Burm., H. 1, p. 238; McL. 6, p. 247. N. Y., Md., D. C.

COLOBOPTERUS Ramb.

- excisus Hag., H. 30, p. 153. Fla., Ky., Ct., Mass.
Euptilon is bogus.

PANORPIDÆ.**BITTACUS** Latr.

- apicalis Uhler, H. 1, p. 248. Ill., Va.
 apterus McLach., McL. 4, p. 100. Cal.
 chlorostigma McLach., McL. 7, p. 36. Cal.
 occidentis Walk., H. 1, p. 247. Pa.
 pilicornis Westw., H. 1, p. 246. N. Y., Can.

punctiger Westw., H. 1, p. 247. Ga.
stigmaterus Say, H. 1, p. 247. Mo., Md., Ga., D. C.
strigosus Hag., H. 1, p. 246. Ill., D. C., Mo., N. Y.

PANORPA Linn.

americana Swed., H. 1, p. 242. Ga., Ky.
confusa Westw., H. 1, p. 244. Mass., N. Y.
debilis Westw., H. 1, p. 243. Pa., N. Y., Ga.
lugubris Swed., H. 1, p. 241. S. C., Fla., Ga.
maculosa Hag., H. 1, p. 245. Pa., N. Y.
nebulosa Westw., H. 1, p. 243. N. Y., D. C., Mass.
rufa, Gray, H. 1, p. 242. Ga.
rufescens Ramb., H. 1, p. 241. Atlantic States.
subfurcata Westw., H. 1, p. 244. Can.
venosa Westw., H. 1, p. 242. Eastern U. S.

PANORPODES McLach.

oregonensis McLach., McL. 7, p. 33. Ore.

MEROPE Newm.

tuber Newm., H. 1, p. 248. Pa., Va., D. C.

BOREUS Latr.

brumalis Fitch, H. 1, p. 240. N. Y., D. C.
nivoriundus Fitch, H. 1, p. 240. N. Y.
californicus Pack., Pack. 2, p. 408. Cal.

PHRYGANIDÆ.

PHRYGANEA Linn.

cinerea Walk., H. 1, p. 252; H. 14, p. 410. Brit. Am., Me.
improba Hag., H. 14, p. 417. Saskatschawan, N. Y.
interrupta Say, H. 1, p. 256; H. 14, p. 411. Mass., N. Y., N. J., Mo.
vestita Walk., H. 1, p. 253; H. 14, p. 418. Mass., Ga.
commixta Walk., H. 1, p. 253.

AGRYPNIÆ Curt.

glacialis Hag., H. 14, p. 426. Saskatschawan, Labrador.
straminea Hag., H. 14, p. 425. Saskatschawan.
colorata Hag., H. 14, p. 424. Saskatschawan.

NEURONIA Leach.

angustipennis Hag., H. 14, p. 400. Ill., Mich., Mass.
concatenata Walk., H. 14, p. 385. Mass., Ga., Fla., Can.
irrorata Hag., not Fab., H. 1, p. 249.
dossuaria Say, H. 1, p. 255; H. 14, p. 383. Mass., N. H.
ocellifera Walk., H. 1, p. 252; H. 14, p. 400. Mass., Ill., La.
ocelligera Walk., H. 1, p. 250; H. 14, p. 389. Nova Scotia.
pardalis Walk., H. 1, p. 250; H. 14, p. 394. Nova Scotia, N. H., Can., Labrador.
postica Walk., H. 1, p. 251; H. 14, p. 398. Eastern U. S., Can.
Ptilostomis kovalevskii Kol., var. B.
semifasciata Say, H. 1, p. 250; H. 14, p. 396. Brit. Am., Eastern U. S.
Ptilostomis kovalevskii Kol., var. A.
stygipes Hag., H. 14, p. 388. Me., N. H., Mass.

LIMNEPHILIDÆ.**COLPOTAULIUS** Kol.

perpusillus Walk., H. 1, p. 254. Can.

LIMNEPHILUS Leach.

combinatus Walk., H. 1, p. 255. Can., Brit. Am.

rhombicus Walk. (Hag.), not Fab., H. 1, p. 254.

externus Hag., H. 1, p. 257. North Red River.

extractus Walk., H. 1, p. 260. Can., North Red River.

hyalinus Hag., H. 1, p. 258.

femoralis Kirby, Walk., H. 1, p. 260. N. Am. [no definite locality.]

gravidus Hag., H. 1, p. 257. Cal.

indivisus Walk., H. 1, p. 260. Can., Nova Scotia.

subguttatus Walk., H. 1, p. 261.

perjurus Hag., H. 1, p. 258. Alaska.

(?) *radiatus* Say, H. 1, p. 256. Northwest Terr.

(?) *sericeus* Say, H. 1, p. 256. Northwest Terr.

vastus Hag., H. 1, p. 257. Alaska.

GONIOTAULIUS Kol.

dispectus Walk., H. 1, p. 259. Can., Nova Scotia.

multifarius Walk., H. 1, p. 259.

(?) *plaga* Walk., H. 1, p. 263.

femoralis Kirby (Kol.), Kolen., Trichopt. p. 31. Arctic America.

nebulosus Kirby, H. 1, p. 259. Brit. Am., Can.

subpunctulatus Zett., H. 1, p. 261.

partitus Walk., H. 1, p. 261. Can.

trimaculatus Hag., not Zett., H. 1, p. 261.

pudicus Hag., H. 1, p. 262. N. Y., D. C. [Note 15.]

sitchensis Kol., H. 1, p. 263. Alaska. [No description.]

submonillifer Walk., H. 1, p. 260. N. Am. [no definite locality.]

GLYPHOTÆLIUS Steph.

hostilis Hag., H. 14, p. 444. Brit. Am., N. H., Mich.

GRAMMOTAULIUS Kol.

interrogationis Zett., H. 1, p. 254; H. 14, p. 450. Greenland.

præcox Hag., H. 14, p. 451. Brit. Am.

DESMOTAULIUS Kol.

planifrons Kol., H. 1, p. 263. Greenland, Labrador.

ANABOLIA Steph.

bimaculata Walk., H. 1, p. 263. Can., North Red River, Ill.

sordida Hag., H. 1, p. 264.

consocia Walk., H. 1, p. 264. N. Am. [no definite locality.]

modesta Hag., H. 1, p. 265. Labrador.

HALESUS Steph.

- argus* Harris, Harr. 1, p. 333. Mass.
guttifer Walk., H. 1, p. 266. Can., Ga., La.
hostis Hag., H. 1, p. 266. North Red River, Ill.
indicans Walk., H. 1, p. 258. Ga.
indistinctus Walk., H. 1, p. 266. Newfoundland, La.
 (?) *amicus* Hag., H. 1, p. 265.
maculipennis Kol., H. 1, p. 267. N. Am. [no description, no definite locality.]
mutatus Hag., H. 1, p. 267. Labrador.
scabripennis Ramb., H. 1, p. 265. Ga.

ENECYLA Ramb.

- areolata* Walk., H. 1, p. 267. Can.

STENOPHYLAX Kol.

- divergens* Walk., H. 1, p. 255. N. Am., [no definite locality] Col.
gentilis McLach., McL. 5, p. 108. N. H.
gilvipes Hag., H. 18, p. 601. Brit. Columbia.
limbata McLach., McL. 5, p. 108. Newfoundland.
punctatissimus Walk., H. 1, p. 264. Nova Scotia.

PLATYPHYLAX McLach.

- atripes* Hag., H. 18, p. 600. Col.
designata Walk., H. 1, p. 269. Brit. Am., Can., Nova Scotia, Col.
lepida Hag., H. 1, p. 269. Pa.
subfasciata Say, H. 1, p. 269. Pa., Northwest Terr.

ECCLISOPTERYX Kol.

- irrorata* Fab. Can.
L. intercisa Walk., H. 1, p. 268.
præterita Walk., H. 1, p. 268. Brit. Am.

NEOPHYLAX McLach.

- concinus* McLach., McL. 5, p. 111. N. Y.

APATANIA Kol.

- pallida* Hag., H. 1, p. 270. Can.
nigra Walk., H. 1, p. 270. Can.
 (?) *hirtipes* Curt., H. 1, p. 295. Arctic Am.

CRYPTOTHRIX McLach.

- difficilis* Walk., H. 1, p. 268. Nova Scotia, Can., Mass., N. H.
P. coagulata (Say mss.), Prov.

SERICOSTOMATIDÆ.**SERICOSTOMA** Latr.

- americana* Walk., H. 1, p. 270. Ga.
crassicorne Walk., H. 1, p. 271. Ga.

NOTIDOBIA Steph.*griseola* McLach., McL. 5, p. 112. Cal.*nigricula* McLach., McL. 5, p. 113. Cal.**BRACHYCENTRUS** Curtis.*fuliginosus* Walk., H. 1, p. 272. Can., D. C.*incanus* Hag., H. 1, p. 272.*lateralis* Say, H. 1, p. 274. Ky.*numerosum* Say, H. 1, p. 273. Ind.*signatus* Fab., H. 1, p. 250. N. Am. [no definite locality.]**SILO** Curtis.*californicus* Hag., H. 1, p. 272. Cal.*griseus* Hag., H. 1, p. 273. N. Y.**MORMONIA** Steph.*togata* Hag., H. 1, p. 273. Can., D. C.**OLIGOPLECTRUM** McLach.*Dasystoma* Hag.*rusticum* Hag., H. 10, p. 267. Saskatchewan.**SPHINCTOGASTER** Prov.*lutescens* Prov., P. 1, p. 262. Can.**NOSOPUS** McLach.*podager* McLach., McL. 5, p. 114. Cal.**HELICOPSYCHE** Bremi.*borealis* Hag., H. 1, p. 271; H. 7, p. 252. N. Y., Can.**HYDROPTILIDÆ.****PHRYXICOMA** Eaton.*albicornis* Hag., H. 1, p. 275; E. 4, p. 138. Can.*(?) tarsalis* Hag., H. 1, p. 275; E. 4, p. 148. Can.**RHYACOPHILIDÆ.****RHYACOPHILA** Pict.*fuscula* Walk., H. 1, p. 295. Can., N. Y.*torva* Hag., H. 1, p. 296. D. C., N. Y.*soror* (Hag.) Prov., P. 1, p. 142. Can.**CHIMARRHA** Leach.*aterrima* Hag., H. 1, p. 297. Can., N. Y., Pa., D. C., Ga.*socia* Hag., H. 1, p. 297. D. C.**AGAPETUS** Curtis.*celatus* McLach., McL. 5, p. 139. Cal.*(?) tenebrosus* Walk., H. 1, p. 274. Can.

BERÆA Steph. .

- maculata* Hag., H. 1, p. 296. Can.
obscura Walk., H. 1, p. 297. Can.
viridiventris Say, H. 1, p. 296. Ohio.

LEPTOCERIDÆ.**MOLANNA** Curt.

- cinerea* Hag., H. 1, p. 276. Can.
inconspicua Walk., H. 1, p. 275. Ga.
rufa Hag., H. 1, p. 276. N. Y.

LEPTOCERUS Leach.

- albastictus* Hag., H. 1, p. 276. N. Am. [no definite locality.]
dilutus Hag., H. 1, p. 277. Ill.
indecisus Walk., H. 1, p. 279. Can.
mentiens Walk., H. 1, p. 278. Can.
lugens Hag., H. 1, p. 276.
submacula Walk., H. 1, p. 278. Can.
transversus Hag., H. 1, p. 279. D. C.
variegatus Hag., H. 1, p. 278. Ill.

SETODES Ramb.

- albida* Walk., H. 1, p. 283. Can.
nivea Hag., H. 1, p. 281.
exquisita Walk., H. 1, p. 280. Ga., D. C., Can.
flaveolata Hag., H. 1, p. 282. D. C., La.
ignita Walk., H. 1, p. 281. Ga., D. C.
immobilis Hag., H. 1, p. 283. Can.
incerta Walk., H. 1, p. 278. Can., D. C.
micans Hag., H. 1, p. 283.
injuncta Hag., H. 1, p. 283. Can., Ill.
pavida Hag., H. 1, p. 282. D. C.
piffardii McLach., McL. 1, p. 160. Can.
resurgens Walk., H. 1, p. 282. Can., D. C.
cinerascens Hag., H. 1, p. 282.
sagitta Hag., H. 1, p. 284. Fla.
uwarowii Kol. Ga., Pa., Fla., S. C., D. C., Ohio.
candida Hag., H. 1, p. 280.

MYSTACIDES Latr.

- atra* Pact. Can.
sepulchralis Walk., H. 1, p. 277.
nigra Linn., H. 1, p. 277. D. C.

ANISCENTROPUS McLach.

- latifascia* Walk., H. 1, p. 279; McL. 2. N. Am. [no definite locality.]
G. elegans Walk., H. 1, p. 279.
pyraloides Walk., H. 1, p. 271; McL. 2. Ga., Pa.

HETEROPECTRON McLach. [Note 16.]

- borealis* Prov., P. 1, p. 263. Can.
californicum McLach., McL. 5, p. 125. Cal.

HYDROPSYCHIDÆ.**MACRONEMA** Pict.

- flava* Hag., H. 1, p. 285. Mo.
polygrammaticum McLach., McL. 5, p. 129. Pa. (?)
transversa Walk., H. 1, p. 289. Ga.
zebrata Hag., H. 1, p. 285. Can., N. Y., Md., Va., D. C., W. Va.

HYDROPSYCHE Pict.

- alternans* Walk., H. 1, p. 288. Can., N. Y., D. C.
morosa Hag., H. 1, p. 287.
indecisa Walk., H. 1, p. 288.
chlorotica Hag., H. 1, p. 290. Can., N. Y., Ill.
confusa Walk., H. 1, p. 291. Can.
depravata Hag., H. 1, p. 290. Ga.
dubitans Walk., H. 1, p. 289. N. Am. [no definite locality.]
incommoda Hag., H. 1, p. 290. Ga.
maculicornis Walk., H. 1, p. 289. Can.
phalerata Hag., H. 1, p. 287. Can., N. Y., D. C., Pa.
reciproca Walk., H. 1, p. 288. N. Am. [no definite locality.]
dubia Walk., H. 1, p. 288.
robusta Walk., H. 1, p. 289. N. Am. [no definite locality.]
scalaris Hag., H. 1, p. 286. Can., D. C.
sordida Hag., H. 1, p. 290. Can., D. C.

SMICRIDEA McLach.

- fasciatella* McLach., McL. 5, p. 136. Texas.

PHILOPOTAMUS Leach.

- distinctus* Walk., H. 1, p. 291. N. Y.

POLYCENTROPUS Curt.

- cinereus* Hag., H. 1, p. 293. Can.
confusus Hag., H. 1, p. 293. N. Y., D. C.
crassicornis Walk., H. 1, p. 292. Ga.
crepuscularis Walk., H. 1, p. 292. Can.
invarius Walk., H. 1, p. 292. Nova Scotia.
lucidus Hag., H. 1, p. 294. N. Y., Pa.
validus Walk., H. 1, p. 292. U. S. [no definite locality.]
vestitus Hag., H. 1, p. 293. D. C.

PSYCHOMYIA Latr.

- flavida* Hag., H. 1, p. 294. Can., D. C.

TINODES Steph.

- consueta* McLach., McL. 5, p. 138. Cal.
livida Hag., H. 1, p. 295. Can.
 (?) *parva* Walk., H. 1, p. 294. Can.

BIBLIOGRAPHY.

Hagen, Herman A.

1. Synopsis of the Neuroptera of North America, Smithsonian Institution, Washington, D. C., 1861.
2. Ueber die Neuroptern Fauna Amerikas, Stett. Ent. Zeit., 1860.
3. Observations on certain North American Neuroptera, Proc. Acad. Nat. Sci. Phila., 1863, pp. 167—182.
4. Abbot's Handzeich. im Brit. Mus. u. d. Neuroptera Georiens, Stett. Ent. Zeit., 1863.
5. Psocinorum et Embidinorum Synopsis synonymica, Stett. Ent. Zeit. 1865.
6. Hemerobidarum. Synopsis synonymica, Stett. Ent. Zeit. 1866, pp. 369—462.
7. Description of a genus of Caddice-flies of which the larvæ construct cases known as *Helicopsyche*, Ent. Monthly Mag. 1866, pp. 252—255.
8. Rev. d. v. Uhler u. v. Scudder beschr. Odonaten, Stett. Ent. Zeit. 1867, pp. 87—100.
9. On Scudder's White Mountain Odonata, Proc. Bost. Soc. Nat. Hist. 1867.
10. Monographie der Gattung Dasystoma Rambur, Stett. Ent. Zeit. 1868.
11. Phryganidarum Synopsis synonymica, Verh. k. k. zool.-bot. Ges. in Wien, 1869, pp. 799—890.
12. Odonata from the Yellowstone, Geol. Survey Terr. 1872.
13. On the Neuroptera in Harris' collection, Proc. Bost. Soc. Nat. Hist. 1873.
14. Beitrage zur kenntniß der Phryzaniden, Verh. k. k. zool.-bot. Ges. in Wien, 1873, pp. 372—452.
15. On the Phryganidæ, Proc. Soc. Nat. Hist. 1873, pp. 384—385.
16. Notes on the Ephemeridæ, with remarks by Rev. A. E. Eaton, Trans. Ent. Soc. Lond. 1873.
17. Odonate Fauna of Georgia, Proc. Bost. Soc. Nat. Hist. 1874.
18. Report on the Pseudo-Neuroptera and Neuroptera collected by Lieut. W. J. Carpenter in 1873, in Colorado, Bull. Geol. Survey Terr. 1875.
19. Report on the Neuroptera and Pseudo-Neuroptera collection in Colorado, New Mexico and Arizona, in 1872—74, U. S. Geol. Survey west of 100 meridian, zool. 1875, Washington.
20. Synopsis of the Odonata of Am., Proc. Bost. Soc. Nat. Hist. 1875, pp. 20—96.
21. Symphasis ein neue Mantispiden Gattung, Stett. Ent. Zeit. 1877, p. 208.
22. Beit. zur kenntniß von Pteronarcys, Stett. Ent. Zeit. 1877, p. 477.
23. The exceedingly numerous appearance of a Phryganeid, Can. Ent. June, 1880, p. 108.
24. Some Psocina of the United States, Psyche, April, May, June, 1881.
25. Beitrage zur Monographie der Psociden, Stett. Ent. Zeit. 1882—83.
26. Monograph of the Embidina, Can. Ent. 1885.
27. Monograph of the earlier stages of the Odonata, subfamilies Gomphina and Cordulegastrina, Trans. Am. Ent. Soc. 1885.
28. Monograph of the Hemerobidæ—Parts I and II, Proc. Bost. Soc. Nat. Hist. 1886, pp. 250—269; 276—292.
29. On *Hemerobius (Psectra) dipterus* Burm. and *H. delicatulus* A. Fitch, Ent. Amer. 1886, pp. 21—24.
30. Stray notes on the Myrmeleonidæ, Can. Ent. 1887—88.

31. Revision of Odonata, Psyche. 1889-90.
32. A Synopsis of the Odonat genus *Leucorhina* Britt., Trans. Am. Ent. Soc. 1890.
33. On the larvæ of the Hemerobina, Proc. Bost. Soc. Nat. Hist. 1873, pp. 243-48.
34. Some Remarks on White Ants, Proc. Bost. Soc. Nat. Hist. 1878, pp. 121-24.
35. Notice of capture of *Anax longipes* in Massachusetts, Ent. Month. Mag. 1884.
36. The Tarsal and Antennal Characters of Psocidæ, Ent. Month. Mag. xix; Psyche, 1883, p. 52.

De Selys-Longchamps, E.

1. Synopsis des Agrionines, 6 parts, Bull. Acad. Belg. 1860-78; 1a, 1860-66; 1b, 1876-77; 1c, 1878.
2. Secondes additions au Synopsis des Calopterygines, Bull. Acad. Belg. 1869.
3. Troisiemes additions au Synopsis des Calopterygines Bull. Acad. Belg. 1873.
4. Synopsis des Cordulines, Bull. Acad. Belg. 1871.
5. Additions au Synopsis des Cordulines, Bull. Acad. Belg. 1874.
6. Secondes additions au Synopsis des Cordulines, Bull. Acad. Belg. 1878.
7. Secondes additions au Synopsis des Gomphines, Bull. Acad. Belg. 1869.
8. Troisiemes additions au Synopsis des Gomphines, Bull. Acad. Belg. 1873.
9. Appendix aux troisiemes additions et liste des Gomphines decrites dans le Synopsis et ses trois additions, Bull. Acad. Belg. 1873.
10. Quatriemes Additions au Synopsis des Gomphines, Bull. Acad. Belg. 1878.
11. Revision des Ophiogomphus, C. R. Ent. Soc. Belg. 1879.
12. Revision des Diplax paleartiques, Ent. Soc. Belg. 1884, pp. 29-45.
13. Notes on Odonata from Newfoundland, etc., Ent. M. Mag. 1875, pp. 241-43.
14. Synopsis d'Aeschnines I Class., Bull. Acad. Belg. 1883.
15. Revis. du Syn. d. Agrionines, Bull. Acad. Belg. 1886.

McLachlan, Robert.

1. Notes on the N. Am. Phryganeidæ, with especial reference to those contained in the coll. of the Brit. Museum, Entom. Annual 1863, pp. 155-63.
2. Aniscentropus, a new genus of Exotic Trichoptera, Tr. Ent. Soc. Lond. 1863.
3. On the types of the Phryganeidæ described by Fabricius from the Banksian collection, Trans. Ent. Soc. Lond. 1863.
4. *Bittacus apterus* nov. sp., Ent. Month. Mag. 1871, p. 100.
5. On new forms of Extra European Trichopterous Insects, Journ. Linn. Soc. Zool. 1871.
6. An att. tow. a syst. class. of the fam. Ascalaphidæ, Journ. Linn. Soc. Zool. 1871.
7. Deser. of new Neuroptera, Ent. Month. Mag. 1881, pp. 33, 36 and 55.
8. Two new species of *Anax*, etc., Ent. Month. Mag. 1883, pp. 127-30.
9. New Holophthalmous Ascalaphidæ, Trans. Ent. Soc. Lond. 1891.
10. New species of Hemerobina, with synonymic notes, 1st series, Ent. Month. Mag. 1869, pp. 21-27.

Walsh, Benjamin D.

1. List of the Pseudoneuroptera of Illinois, Proc. Acad. Nat. Sci. Phil. 1862, pp. 361-402.
2. Notes and descriptions of about twenty new N. Am. species of Pseudoneuroptera, Proc. Acad. Nat. Sci. Phil. 1863, pp. 182-271.
3. On the pupa of the Ephemeroous genus *Bætisca*, Proc. Ent. Soc. Phil. 1864, pp. 200-206.
4. The Bug-hunter in Egypt, Am. Ent. vol. i, p. 6, 33.

Eaton, A. E.

1. Monograph of the Ephemeridæ, Trans. Ent. Soc. Lond. 1871, pp. 1-164.
2. A Revisional Monograph of recent Ephemeridæ, Trans. Linn. Soc. Lond. 1883-86.
3. Remarks to Hagen's notes on Ephemeridæ, Trans. Ent. Soc. Lond. 1873.
4. On the Hydropsilidæ, a family of the Trichoptera, Trans. Ent. Soc. Lond. 1873, pp. 125-151.

Aaron, S. F.

1. Descriptions of new Psocidæ in the coll. Am. Ent. Soc., Trans. Am. Ent. Soc. 1883, pp. 37-40.
2. *Tæniopteryx fasciata*, Ent. Amer. 1885.
3. Oviposition in *Agrion*, Ent. Amer. 1885.
4. New Psocidæ in the coll. of the Amer. Ent. Soc., Proc. Acad. Nat. Sci. Phil. 1886, pp. 12-17.

Albarda, Hermann.

1. Revision des Raphidides, Tijd. voor. Entom. 1891, pp. 65-184.

Ashmead, Wm. H.

1. On a new *Psocus*, Can. Ent. 1879, p. 228.
2. Orange Insects.

Buckley, S. B.

1. Descriptions of two new species of Termites from Texas, Proc. Am. Ent. Soc. 1862, pp. 212-215.

Brauer, F.

1. Beiträge zur Kenntniss der Neuropteren, Verh. k. k. zool.-bot. Ges. in Wien, 1864, pp. 896-902.

Beutenmüller, Wm.

1. Notes on the oviposition of some species of *Libellula*, etc., Ent. Am. 1890, pp. 165-66.
2. Preliminary catalogue of Odonata found in New York State,—In "Dragon-flies vs. Mosquitoes," Appleton & Co., N. Y., 1890.

Calvert, P. P.

1. Notes on some N. Am. Odonata, etc., Trans. Am. Ent. Soc. 1890, pp. 33-40.
2. Additional notes on some N. Am. Odonata, Ent. News, 1890, p. 73.
3. Virginian Dragon-flies, Ent. News, 1890, p. 22.

Clarke, Cora H.

1. Caddice worms of Stony Brook, Psyche 1891, p. 153.

Crane.

1. Neuroptera in Smith's Cat. Ins. N. J., Final Report Geol. Survey N. J., 1890.

Davis.

1. The Breeding Habits of some of our Dragon-flies, Ent. Amer. 1885, p. 18.

Garman, H.

1. Aquatic Insects of the Mississippi Bottoms, Ill. State Lab. Nat. Hist. 1889.

Gerard, W. R.

1. Notes on the eggs and larvæ of an unknown Dragon-fly, Am. Ent. iii, pp. 174-75.

Harris, T. W.

1. Entomological Correspondence, Bost. Soc. Nat. Hist. 1869.

Harvey, F. L.

1. A Contribution to the Odonata of Maine, Ent. News, 1891 and 1892.

Kirby, Wm.

1. On the Libellulinae, Trans. Zool. Soc. Lond. 1889.

Kolbe, H. J.

1. Neue Psociden des Konigl. Zool. Museums zu Berlin., Stett. Ent. Zeit. 1883, p. 65.

McCook, H. C.

1. On a web-spinning Neuropterous Insect, Proc. Acad. Nat. Sci. Phil. 1884, pp. 278-79.

Moffat, J. A.

1. Notes on Ant Lions, Can. Ent. 1884, p. 121.

Moody, H. L.

1. Notes on the habits of the Ant Lions, Can. Ent. 1873.

Mundt, A. H.

1. Migration of Dragon-flies, Can. Ent. 1882.

Osten Sacken, C. R.

1. Ueber das Betragen des Calif. flugellosen Bittacus, Wiener Ent. Zeit. 1882.

Packard, A. S.

1. Larval cases of Trichoptera, Am. Nat. 1869, pp. 160-61.
2. New or rare American Neuroptera, Thysanura and Myriapoda, Proc. Bost. Soc. Nat. Hist. 1871, pp. 405-9.

Pettit, J.

1. List of Neuroptera (Grimsby, Ont.), Can. Ent. 1874, p. 45.

Provancher, L'Abbe.

1. Le Petite Faune Canadien, Nevropteres,—In "Naturaliste Canadien" 1876-78. Species described at various times in Nat. Can.; later united into "Les Nevropteres."

Riley, C. V.

1. Report on Insects of Missouri 1873, pp. 142-45.

Scudder, S. H.

1. Odonata of the Isle of Pines and of the White Mountains of New Hampshire, Proc. Bost. Soc. Nat. Hist. 1866, pp. 187-211.
2. *Lestes eurinus* Say, Psyche 1891, p. 66.

Shimer, H.

1. Description of the imago and larva of a new species of *Chrysopa*, Proc. Ent. Soc. Phil. 1865, pp. 208-11.

Torrey, Bradford.

1. Second flight of Dragon-flies, Am. Nat. August, 1880, p. 59.

Wadsworth, Mattie.

1. List of Dragon-flies (Odonata), Ent. News, 1890, pp. 36-37; 55-57.

2. Additions and Corrections to the list of Dragon-flies, etc., Ent. News, 1891, pp. 11-12.
3. Second Additions and Corrections to the list of Dragon-flies, etc., Ent. News, 1892, pp. 8-9.

Walker, F.

1. Lord's Naturalist in Vancouver's Island, II, 1869.

Todd, J. G.

1. Notes on the Breeding Habits of Libellulidæ, Am. Nat. 1885, pp. 306-7.

NOTES.

Note 1.—*Pseudoperla*; Mr. MacGillivray proposes this genus for those species of *Perla* with but two ocelli.

Note 2.—*Echmepteryx agilis* is, I think, identical with *A. hageni* Pack. I use the genus *Amphientomum*, as Hagen saw Packard's specimen and said they belonged to this genus; therefore, I consider *Echmepteryx* unnecessary.

Note 3.—*Psocus canadensis* Prov. is probably *P. purus* Walsh.

Note 4.—Eaton has given new names to several of our Ephemerids without, I think, just cause; they are as follows: *Hexagenia variabilis*, *Ephemerella varia*, *Heptagenia hageni*, *H. jejuna*, *Leptophlebia memorialis*, *Ephemerella walkeri*, *Bætis hageni* and *Callibaëtis hageni*.

Note 5.—I have united several of Eaton's genera to *Siphilurus* and *Heptagenia*. *Ameletus* and *Chironetes* equal *Siphilurus*; *Rithogenia*, *Ecdyurus*, *Iron*, *Cinygma*, all equal *Heptagenia*.

Note 6.—*Lestes stulta* is perhaps a race of *L. forcipata*; and *L. vidua* of *L. congener*.

Note 7.—De Selys considers *Enallagma annexa*, *boreale* and *robusta* races of the European *E. cyathigerum*.

Note 8.—De Selys puts *Æ. heros* in a separate genus, *Epiæschna*, as the eyes touch only at one point.

Note 9.—I unite *Plathemis* to *Libellula*. Kirby has recently divided *Libellula* into various genera.

Note 10.—*Libellula incesta* and *axillena* are probably varieties of *L. lydia*.

Note 11.—I have united *Leucorrhina* to *Diplax*. In some specimens of *D. intacta* the sectors of the arculus are not stalked; usually, however, they are pedicellate.

Note 12.—*Diplax imbuta* may be a discolored specimen of *Mesothemis simplicollis*. I have seen a specimen of the latter species with a red thorax and abdomen with the last few segments marked with black.

Note 13.—

NOTHOCHRYSA McLachlan.

Genus related to *Chrysopa*; differs in having the third cubital cell equally divided.

N. californica n. sp.—Length of body 9 mm.; length of wings 12 mm. Dark, antennæ and palpi black. Head reddish yellow, antennal sockets surrounded with black, three black streaks above connected with the black of antennal sockets, a few narrow, blackish lines below antennæ; prothorax black, with a median light stripe widening at each end, the extreme margin light, rest of thorax and abdomen black, the posterior margin of the segments on sides narrowly yellowish. Legs testaceous, middle and hind femora darker, tips of tibiæ and joints of tarsi black. Wings hyaline, veins mostly black, costa and base of radius on fore wings, costa and almost whole of radius on hind wings yellowish, pterostigma brownish; tips of wings rounded; prothorax widest behind, gradually narrowed in front. Abdomen short; antennæ shorter than wings.

Locality.—California.

Note 14.—I consider *Chrysopa illepada*, *fulvibucca*, *chi*, *ypsilon* and *mississippiensis* as all equal to *C. oculata*.

Note 15.—*Limnephilus pudicus* is probably the same as *L. submonilifer* Walk.

Note 16.—*Heteroplectron* is placed in the Leptoceridæ by McLachlan. It will not go to that family in the key. The wings are broad, and the last joint of the palpi is short; if it belongs to the Leptoceridæ, it is certainly a very aberrant member.

ABBREVIATIONS.

A.—Aaron.
Alb.—Albarda.
Ash.—Ashmead.
B.—Buckley.
Cal.—Calvert.
E.—Eaton.
H.—Hagen.
Harr.—Harris.
K.—Kolbe.

Kirb.—Kirby.
McL.—McLachlan.
P.—Provancher.
Pack.—Packard.
S.—De Selys.
Scudd.—Scudder.
Shim.—Shimer.
W.—Walsh.
Walk.—Walker.